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THE MISERY OF DIVERSITY

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ABSTRACT

Evolutionary accounts assert that while diversity may lower subjective well-being (SWB) by creating an evolutionary mismatch between evolved psychological tendencies and the current social environment, human societies can adapt to diversity via intergroup contact under appropriate conditions. Exploiting a novel natural experiment in history, we examine the impact of the social environment, captured by population diversity, on SWB. We find that diversity lowers cognitive and hedonic measures of SWB. Diversity-induced deteriorations in the quality of the macrosocial environment, captured by reduced social cohesion, retarded state capacity, and increased inequality in economic opportunities, emerge as mechanisms explaining our findings. The analysis of first- and second-generation immigrants in Europe and the USA reveals that the misery of home country diversity persists even after neutralizing the role of the social environment. However, these effects diminish among the second generation, suggesting that long-term improvements in the social environment can alleviate the burden of diversity. Finally, in exploring whether human societies can adapt to diversity, we show evidence that diversity causes adopting cultural traits (such as establishing stronger family ties, assigning greater importance to friendships, and adopting a positive attitude towards competition) that can mitigate the misery of diversity. These results survive an exhaustive set of robustness checks.

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1. Introduction

The current levels of intra-societal diversity are the highest in human history, representing uncharted territory for Homo sapiens; however, our understanding of the effects of this multicultural experiment on various outcomes, including subjective well-being (SWB), is, at best, limited (Crisp and Meleady, 2012).[2] The evolutionary approach theorizes happiness as a function of the social environment (Grinde, 2002). This view is built upon the premise that human emotions were shaped tens of thousands of years ago in the ancestral social environment, known as the *environment of evolutionary adaptedness* (EEA), where people lived in small homogenous groups, covering more than ninety-nine percent of human existence, and have not changed much since then (Crawford, 1998). During this period, Darwinian forces led to the natural selection of cognitive and emotional properties of the human brain to favor survival and procreation, but not necessarily for the pursuit of happiness (Grinde, 2002). The resulting manifestations of the states of subjective well-being (SWB), such as happiness, unhappiness, satisfaction, dissatisfaction, and emotional states, are psychological responses by our brains to the conditions of the social ecology to mediate adaptation problems, aiming to maximize the likelihood of survival (Grinde, 2002; Buss, 2000). Accordingly, Homo sapiens have an evolved tendency to prefer homogeneity over heterogeneity, stability over change, and simplicity over complexity (Caporael, 1997; McPherson et al., 2001) as they are programmed to identify and cooperate with ingroup members via establishing reciprocal relationships (Nowak and Sigmund, 2005; Fehr and Fischbacher, 2003). This view implies that human SWB may improve (decline) in favorable (unfavorable) social environments. As human genetic makeup has not changed much since we stopped living in small communities, an *evolutionary mismatch* between our evolved psychological makeup and current social environment, induced by

[2] Following the existing literature, we use the terms happiness, life satisfaction, and SWB interchangeably throughout this article (Dursun and Cesur, 2016).

social diversity, can cause distress and unhappiness (Buss, 2000).[3] On the other hand, according to the intergroup contact hypothesis, advanced by Alport (1954), humans can adapt to their social environment. In particular, interpersonal contact between different groups may reduce prejudice under appropriate circumstances, enabling humans to adapt to diversity (Alport, 1954).

In this article, exploiting a historical natural experiment, we investigate how the social environment, proxied by population diversity, impacts SWB.[4,5] Our natural experiment identifies the impact of deep-rooted diversity based on within-ethnic interpersonal differences on the social environment. We find that diversity lowers human SWB, measured by cognitive life evaluations and hedonic assessments of emotional states. Consistent with the arguments stating that diversity causes a mismatch between the ancestral and current social environment, these results are explained by lowered social cohesion, retarded state capacity, and increased uneven economic opportunities. Furthermore, we document that although the misery of diversity continues to hinder people's happiness even after moving away to other countries, these effects weaken among their offshoots, suggesting that improving the quality of the social environment can mitigate the adverse impacts of

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[3] This conclusion also applies to other situations that do not align with what humans were adapted to, including physical injury, extreme temperatures, and lack of close friends (Grinde, 1996).

[4] While different lines of inquiry have paid increased attention to studying the effects of diversity (Arbatlı et al. 2020) and the role of the social environment in determining people's subjective well-being (SWB) (Helliwell, 2020b), whether and to what degree diverse social environments impact life satisfaction and happiness has not been thoroughly investigated by well-identified studies.

[5] Examining the impact of diversity on SWB may also mediate the shortcomings of standard economic indicators, such as personal income, GDP, education, wealth, and consumption, since they do not adequately capture true human well-being despite their apparent advantages (Frey and Stutzer, 2002; Graham, 2005; Fleurbaey, 2009). In fact, in the recent past, economists, as well as researchers from other branches of social sciences, has paid closer attention to the study of happiness and life satisfaction to address the limitations of conventional measures of welfare. This line of inquiry has shown compelling evidence that the study of SWB is complex and multi-dimensional because many factors influence SWB in different ways. Among these are the Sunday alcohol sale laws (Cohen-Zada and Sander, 2011), welfare transfers (Herbst, 2013), religious participation (Campante and Yanagizawa-Drott, 2015), education (Dursun and Cesur, 2016), the extent of immigrants' assimilation to host country (Angelini, Casi and Corazzini, 2015), quality of housing (Cattaneo et al., 2009), the adoption of piped water (Devoto et al., 2012), genes (Proto and Oswald, 2017), air quality (Ferreira et al., 2013), natural disasters (Rehdanz et al. 2015), income (Frijters et al. 2004a; Luttmer, 2005; Gardner and Oswald, 2007; Bayer and Juessen, 2015), and unemployment (Kassenboehmer and Haisken-DeNew, 2009).

diversity on human SWB in the long run. Finally, while the net impact of diversity on SWB is unfavorable, we also find evidence that human societies adapt to diversity.

There is literature demonstrating that diversity leads to a mismatch between ancestral and current social environments by hindering the quality of the contemporary social ecology. Employing different research methods, data sets, and diversity indicators, a number of articles find that diversity is detrimental to the provision of public goods (Alesina et al., 1999; Alesian et al., 2003; Desmet et al., 2012; Desmet et al., 2017; Miguel and Gugerty, 2005; Habyarimana et al., 2007), triggers intranational wars (Montalvo and Reynal-Querol, 2005; Esteban et al., 2012; Desmet et al., 2012; Arbatlı et al. 2020; Fearon and Laitin, 2003), increases the competitiveness of the social environment (Alesina and La Ferrara, 2005; Arbatlı et al. 2020), gives rise to autocratic norms and institutions (Galor and Klemp, 2017), and can be harmful for economic prosperity (Easterly and Levine, 1997; Ashraf and Galor, 2013a). Therefore, a diverse social ecology can cause negative feelings and misery to the extent that it deviates from the EEA (Easterlin, 1974; Frey and Stutzer, 2000; Verme, 2009; Coupe and Obrizan, 2016; Helliwell et al., 2020b; Altman et al., 2017). This view is also supported by the intergroup conflict theory, which postulates that diversity threatens the well-being of a society because it lowers social solidarity and social capital via decreased trust, altruism, cooperation, and the provision of public goods (Blumer, 1958; Sherif et al., 1961; Huntington, 2004; Helliwell and Putnam, 2004; Putnam, 2007).

However, evidence also supports the argument that people adapt to diversity through intergroup contact (Boisjoly et al., 2006; Ramos et al., 2019; Rao, 2019; Bazzi et al., 2019; Lowe, 2021). Ramos et al. (2019) find evidence that the detrimental effects of social diversity, measured by religious diversity, are alleviated over time. Experimental evidence from India and the United States shows that intergroup contact can lower prejudice and increase sympathy towards non-group members in sports teams (Lowe, 2021) and students in educational institutions (Rao, 2019; Boisjoly et al., 2006). Bazzi et al. (2019), using the population resettlement program in Indonesia as the source of identifying variation, find that while increased intergroup contact in areas with many small groups leads to greater integration, the opposite happens when a handful of groups interact under a high degree of polarization; therefore, intergroup contact can lower prejudices between different groups in the absence of polarization.

Moreover, diverse social environments may favorably impact human well-being by increasing access to a broader spectrum of talent and knowledge (Bar-Yosef, 2002), promoting economic specialization (Depetris-Chauvin and Özak, 2020), putting expansionary pressures on the production possibility frontier via cross-fertilization of ideas, innovation, and entrepreneurship (Ashraf and Galor, 2013a), increasing new mating options in the marriage market, and providing a biological advantage through genetic variability (Glémin et al., 2003).

Considering these multiple and potentially opposing pathways, the net impact of diversity on SWB depends on the relative magnitudes of unfavorable effects on SWB versus the combined counterbalancing role of the speed at which human societies adapt to diverse social environments and the potential favorable impacts it places on human happiness.

We use the exodus of Homo sapiens out of East Africa to identify the impact of a diverse social environment because it is arguably the most potent empirical tool to study the effects of diversity (Ashraf and Galor, 2018). Evidence shows that distance from the cradle of Homo sapiens via prehistorical migratory pathways reduces within-ethnic genetic heterozygosity (Pemberton et al., 2013), captured by the increasing likelihood that two randomly picked individuals from the same ethnic group are genetically similar as one moves away from East Africa via migratory tracks. Following Arbatlı et al. (2020), we use the ancestry-adjusted predicted genetic heterozygosity as the proxy measure of social diversity at the national level. Notably, deep-rooted population diversity, derived from intranational interpersonal differences, influences the outcomes of interest through its effects on the macro social environment rather than gene-specific traits (Ashraf and Galor, 2018).

Our econometric model entirely accounts for any bias that may stem from permanent differences in the regional-level unobservables via controlling for continent-fixed effects. We add geographic and climatic controls to our models to account for their potential effects on pre-historic migratory routes. Following Arbatlı et al. (2020), we undertake two strategies to address the potential threats to our identifying assumptions posed by the post-1500 migrations, lowering the strength of our natural experiment as they substantially alter the levels of diversity in the Americas and Oceania. First, we restrict the estimation sample to the Old World. Second, we instrument ancestry-adjusted population diversity with distance to East Africa via migration routes.

The natural experiment we employ is ideal for our purposes. First, it allows one to gauge the causal impact of social ecology, proxied by deep-rooted diversity, which has shaped historical and contemporary social-ecological conditions and the evolution of cultural traits in the long run (Ashraf and Galor, 2018). Second, our social diversity measure addresses the limitations of conventional diversity indicators, such as fractionalization and polarization indices (Arbatlı et al., 2020), which have limited power to represent the true extent of diversity (Esteban and Ray, 1994; Duclos et at., 2004).

We estimate the impact of diversity on SWB by using data from representative cross-national surveys, the World Database of Happiness (WDH), and the World Happiness Report (WHR). We find that diversity lowers SWB, measured by cognitive life evaluations (i.e., *Life Satisfaction Index* and *Life Ladder Index*) and hedonic well-being (i.e., *Affect Balance Scale*). Exploring the effects on the tales of SWB distribution, we first show that diversity decreases experiencing positive emotions (i.e., *Positive Affect*) and increases negative feelings (i.e., *Negative Affect*). Then, exploiting individual-level data from the World Values Survey (WVS), we show that diversity impacts both the upper and lower tales of life satisfaction and happiness, a hybrid measure of SWB. In parallel, our estimates show that diversity lowers SWB similarly across different income and education levels. Altogether, these findings indicate that diversity impacts a large share of the population, and findings are not driven by the misery of a small fraction of the population on the lower tail of SWB. We also explore non-linearities in the effect of diversity on SWB and do not find any significant evidence of non-linear effects of diversity.

We show that our diversity measure outperforms conventional diversity measures, including the number of ethnic groups, ethnic fractionalization, ethnolinguistic polarization, and religious fractionalization. This pattern of findings suggests that standard diversity indicators fail to capture the true extent of diversity (Arbatlı et al., 2020). When we further break down our diversity measure, we find that within-group diversity, rather than between-group diversity, accounts for a larger portion of the estimated impact.

We perform several robustness checks to test the sensitivity of our findings. We begin the sensitivity analysis by scrutinizing the resiliency of our findings to controlling for potentially endogenous country-level variables, including income, population, legal origin fixed effects, colonial history identifiers, and conventional measures of diversity, including the number of ethnic groups, ethnic fractionalization, ethnolinguistic polarization, and religious fractionalization. Our findings are resilient to specifying these variables.

Recent works by Bond and Lang (2019) and Schröder and Yitzhaki (2017) question the credibility of using SWB scales due to the potential weakness of the cardinal treatment of ordinal variables because such measures provide information on ranking as opposed to an objective assessment of human feelings. To get a handle on this issue, we tested the robustness of our findings to (i) employing dichotomous happiness and life satisfaction indicators as suggested by Bond and Lang (2019) and Schröder and Yitzhaki (2017); (ii) utilizing the dichotomous-around-the-median

(DAM) test, proposed by Bloem and Oswald (2022); (iii) using the Gini's Mean Difference (GMD) described in Yitzhaki and Schechtman (2013); and (iv) the partial identification methodology developed by Bloem (2022). These exercises show that the critiques of Bond and Lang (2019) and Schröder and Yitzhaki (2017) do not impact our conclusions.

As our natural experiment identifies interpersonal differences operating through the sociocultural environment (Ashraf and Galor, 2018), we argue that interpersonal diversity influences SWB through social ecology rather than gene-specific traits. To scrutinize this claim's validity, we test the robustness of our findings by controlling for pairwise genetic distances to Denmark (i.e., empirically observed happiest nation), as previous work suggests that Danes are predisposed to being happier due to genetic makeup (Proto and Oswald, 2017). This exercise has no bearing on our findings.

We further test the sensitivity of our findings to a host of potential confounders, including using Oster's (2019) method to account for the selection on observable and unobservable determinants of SWB; addressing the bias that may stem from the spatial autocorrelation between neighboring nations; excluding countries closer to Addis Ababa, Africa, and the Middle East, regions closer to Addis Ababa to check if our results are driven by systemic differences between these regions and the rest of the world; accounting for the potential confounding effects of proximity to historical and contemporary economic frontiers. These specification checks strengthen our faith in the credibility of our findings.

We explore the potential mechanisms that can explain our findings. First, using information from the WVS, we examine the impact of diversity on the perceptions of macro-environmental conditions to determine if diversity causes a mismatch between evolved psychological tendencies and the conditions of the perceived social environment. In the WVS, the people of diverse societies report limited freedom of choice, lower democratic quality, and lower levels of interpersonal trust.

Therefore, we find evidence that the residents of diverse nations unfavorably evaluate their social environments, suggesting that diversity decreases social capital, an obstacle to achieving harmony and happiness.

Second, we descriptively test the extent to which social-ecological conditions explain the observed effect. We employ composite macroenvironmental quality indicators from the Fund for Peace (FFP), promising to perform better at capturing the quality of social ecology compared to single-dimensional indicators, such as income and civil conflict. We find that diversity substantially lowers the quality of the social environment, measured by the *Fragile States Index* (FSI) and its sub-indicators reflecting the lack of social and political cohesion (measured by *Security Apparatus, Factionalized Elites, and Group Grievance Indexes*), retarded state capacity (measured by *State Legitimacy, Human Rights & Rule of Law Indexes*), and increased inequality in economic opportunities (measured by *Uneven Economic Development Index*). Results show that these social environment quality indicators account for a large share of the relationship between diversity and the *Life Satisfaction Index* and a modest but sizable fraction of the impact on the *Affect Balance Scale*.

To better understand the role of the social environment in determining happiness, we examine the impact of home-country social diversity among first- and second-generation immigrants in Europe and the USA. In doing so, we exploit individual-level data from the European Social Survey (ESS) and General Social Survey (GSS) on the SWB of first- and second-generation immigrants, enabling us to examine the impact of deep-rooted diversity, net of current social environment quality as these individuals live elsewhere from their own and parental home countries. We illustrate that the home-country diversity continues to trump the SWB of first-generation immigrants, suggesting that the social environment in which people grow up has a major role in determining their happiness. Regarding second-generation immigrants, coefficient estimates become smaller and are rendered statistically insignificant, suggesting that the social ecology in which people are raised is a first-order determinant of their SWB. Moreover, these results also provide evidence favoring the argument that our historical natural experiment identifies the impact of diversity on SWB through the social environment and not via the natural selection of particular genes conducive to happiness.

Finally, we investigate if and to what extent humans can adapt to diversity. In particular, we examine whether social diversity leads to establishing stronger family ties, assigning importance to friendships, and adopting a positive attitude towards competition, which are directly associated with SWB (Diener and Seligman, 2002; Grasseni and Origo, 2018). We find that individuals living in a diverse social ecology develop strong kinship ties, attribute greater importance to friendship, and have favorable attitudes towards competition, which can help people mitigate the burden of living in a competitive social environment, even though the net impact of population diversity on SWB is unfavorable.

The rest of the article is organized as follows. Section II introduces the identification strategy. Section III discusses the conceptual background linking diversity to SWB and our contribution. Section IV presents the data. Section V describes the estimating equations. Section VI shows the results, and VII performs the robustness checks. Finally, Section VIII discusses the findings and concludes.

2. The Exodus of Homo Sapiens out of Africa and Social Diversity

The 'Out of Africa' hypothesis postulates that Homo sapiens *first* evolved from Homo erectus in a single area, East Africa, roughly 200,000 years ago (Lewin, 1987). The discovery of modern human fossils in Ethiopia supports this view (Clark et al., 2003; White et al., 2003), arguing that anatomically modern humans migrated out of East Africa to the rest of the world about 50,000 to 100,000 years ago. Figure 1 shows the prehistoric routes for early human migrations out of East Africa (Ramachandran et al., 2005).

Population geneticists demonstrate that the dispersal of anatomically modern humans via migratory routes determined within-ethnic genetic heterogeneity. As one moves away from Ethiopia via migratory tracts, genetic diversity, defined as the likelihood of two randomly picked individuals having dissimilar genetic material, decreases (Harpending and Rogers, 2000) because of the serial founder effect as each successive move away from East Africa includes a subset of the original population (Ramachandran et al., 2005). Empirical evidence confirms the inverse relationship between migratory distance to Addis Ababa and genetic heterozygosity (Ramachandran et al., 2005; Pemberton et al., 2013; Harpending and Rogers, 2000; Prugnolle, Manica, and Balloux, 2005). In Figure 2, using data from Pemberton et al. (2013), we display the negative association between migratory distance to East Africa and genetic diversity.

The inverse relationship between within-society genetic heterozygosity and distance to East Africa holds even after relaxing the strong serial founder effect assumption. Upon discussing potential scenarios (i.e., different levels of population admixture and bottlenecks) based on available evidence and under plausible assumptions, Pickrell and Reich (2014) confirm that within-ethnic genetic diversity declines linearly in the distance to Addis Ababa.

Our diversity measure impacts the outcomes of interest through social ecology, which, over many generations, likely has influenced cultural evolution. In particular, interpersonal diversity determines the endowment of genetic variation, a measure of social diversity, capturing within-group interpersonal differences across the globe. Such differences create a competitive social ecology and adoption of cultural traits conferring fitness advantages in a diverse and competitive environment rather than manifesting themselves through biological traits such as height, weight, IQ, and skin reflectiveness (Ashraf and Galor, 2013a).

Recent findings from the genetics literature also suggest that our natural experiment should not impact the outcomes of interest via phenotypical expression. That is, while within-group genetic differentiation decreases linearly in migratory distance to East Africa, evidence shows that, in many parts of the world, the current dwellers of an area do not necessarily genetically match with those who lived there in the distant past due to admixture of different populations (Pickrell and Reich, 2014). This result supports the view that within-group genetic diversity impacts the outcomes of interest via social environment and not through the emergence of particular genetic material. Therefore, the dispersion of anatomically modern humans out of Africa via migratory routes across the globe provides a unique quasi-experiment for estimating the effects of deep-rooted diversity on social, political, and economic outcomes (Ashraf and Galor 2018).

This measure of social diversity performs better than conventional diversity indicators, such as the indices of fractionalization and polarization, in capturing the true extent of diversity (Arbatlı et al., 2020). In particular, these authors show that while interpersonal population diversity has a substantial and precisely estimated impact on intrastate conflict, fractionalization, and polarization indices fail to explain it.

An emerging line of literature, initiated by Asraf and Oded (2013a), investigates the effects of deep-rooted population diversity by exploiting this natural experiment's power. Asraf and Oded (2013a) show that population diversity has an inverted U-shaped effect on economic development. As an explanation, they argue that while having a favorable impact on economic development via increased innovation and competition, interpersonal differences place detrimental pressure on economic development via lack of cooperation and increased mistrust. The authors confirm their findings using more granular data at the ethnicity level (Ashraf et al., 2014).

Building upon Asraf and Oded (2013a), different studies show that population diversity leads to cultural fragmentation measured by ethnolinguistic fractionalizations and polarizations (Ashraf and Galor,2013b), the emergence of autocratic institutions, which favor social cohesion and structure in diverse environments (Klemp and Galor, 2017), increased intra-societal conflict due to mistrust and diverging political preferences in a diverse environment (Arbatlı et al., 2020), and economic specialization due to abundance of skills, abilities and cognitive capacities available in diverse social ecology (Depetris-Chauvin and Özak, 2020).

3. Data

3.1. Data on Social Diversity

We use the ancestry-adjusted genetic diversity measure, developed by Ashraf and Galor (2013a), as a proxy of deep-rooted population diversity. Underlying data for this index is the expected heterozygosity measures of 53 indigenous human populations genotyped at 780 microsatellite loci as a part of the Human Genome Diversity Project (HGDP–CEPH). It captures the probability that two randomly selected individuals within an ethnic group differ in genetic makeup. In light of the Out of Africa hypothesis, Ashraf and Galor (2013a) constructed predicted genetic diversity for each country by using the coefficient estimate of the impact of migratory distance to Addis Ababa on genetic diversity in the sample of indigenous ethnic groups across the world. Although the HGDP–CEPH covers indigenous ethnic groups not affected by the transatlantic migrations, the population diversity of modern nations in the New World does not match the historical interpersonal diversity. To mitigate this issue, Ashraf and Galor (2013a) account for the influence of post-1500 population movements on contemporary diversity by calculating the average expected heterozygosity weighted by post-1500 migrations. They also consider the diversity that stems from differences between ethnic groups in each country by incorporating the predicted genetic diversity of the pre-colonial ancestral population of the current subnational population.

3.2. Data on Subjective Well-Being

The literature identifies two aspects of SWB: cognitive and emotional (Diener 1984). The cognitive component focuses on life evaluations measuring people's subjective judgment of how satisfied they are with their life as a whole rather than short-term feelings or satisfaction with specific domains of their life, including satisfaction with the job, health, relationship, income, house, and social life (Diener et al., 1985; Pavot and Diener, 1993). The life satisfaction scales and the Cantril Ladder are used as overall life evaluation indicators in the literature (Diener et al., 2013). The emotional aspect focuses on pleasant and unpleasant feelings, measured by people's mood states in the recent past, such as yesterday or the past few weeks. The Affect Balance Scale, also known as the Bradburn Scale of Psychological Well-being (Bradburn, 1969), is considered the standard measure of mood states in the literature (Bradburn, 2015). Finally, the self-reported feeling of happiness scale is a hybrid measure reflecting both emotional states and cognitive evaluation (OECD, 2013).

We use SWB indicators, representing both the cognitive and hedonic aspects of SWB, from the World Value Survey (WVS), the World Database of Happiness (WDH), and the World Happiness Report (WHR) (Helliwell et al., 2020a).

Our first SWB measure is the *Life Satisfaction Index*, defined as the extent to which a person positively evaluates the quality of his or her life as a whole. For the country-level analysis, our first SWB measure is the *Life Satisfaction Index,* which comes from the WDH. In the WDH (Veenhoven, 2017), the *Life Satisfaction Index* is available at the country level for 142 nations and constructed based on questions comparable to the WVS. We take the average value of this measure across all available years for each country and standardize it to use in the country-level analysis.

Our second SWB indicator is Gallup's Cantril Ladder, also known as the *Life Ladder*, obtained from the WHR (2020). The survey question for the *Life Ladder* is "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" We use the country average of this life evaluation question for the years between 2012 and 2020, a period for which data on all the countries are available. We use a standardized version of this variable in the regression analysis.

Finally, the *Affect Balance Scale*, derived from *Negative Affect* and *Positive Affect,* captures the emotional aspect of SWB. These variables are derived from the WHR (2020), based on Gallup World Poll waves. They are constructed using the respondent's self-expressed pleasurable and unpleasurable mood states regarding everyday life experiences in the recent past. *Positive Affect*, reflecting pleasant emotions (i.e., enjoyment, love, feeling well rested, smiling or laughing a lot, being treated with respect, doing something interesting, and being proud of something), is created by taking the average value of these variables. *Negative Affect*, representing unpleasant feelings (i.e., physical pain, worry, sadness, stress, anger, depression), is built analogously. Based on yes or no responses to the questions, *Positive Affect* is calculated as the percentage of yes to pleasurable feelings, and *Negative Affect* is quantified as the percentage of yes to unpleasurable emotions. Finally, the *Affect Balance Scale* equals the difference between *Positive Affect* and *Negative Affect*. Evidence shows that the evaluations of pleasant and unpleasant emotions are independent of one another as they do not merely cancel or correspond to the inverse of each other; therefore, the *Affect Balance Scale*, reflecting both pleasant and unpleasant emotions, is an overall measure of hedonic well-being (Bradburn, 2015). We utilize the country average of these measures for the years 2012–2020, which is the time frame for which data are available for all the countries. In the regression analysis, we employ the standardized form of these variables with a mean of zero and a standard deviation of one.

For the individual-level analysis, we use data from the WVS. In the WVS, the *Life Satisfaction Index* is obtained from all the available seven waves of the WVS, integrated with the European

Values Survey (EVS), conducted in 117 countries and territories across the globe and surveyed more than 650,000 respondents.[6] In particular, we use responses to the following survey question: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?" Based on this information, we construct the *Life Satisfaction Index* by normalizing the responses with a mean zero and a standard deviation of one. We also construct binary variables *Satisfied* and *Dissatisfied* to capture the lower and upper tails of the life satisfaction distribution. *Satisfied* is set equal to 1 for respondents who rated their satisfaction levels as 8, 9, or 10 and coded as 0 otherwise. *Dissatisfied* is equated to 1 for those who reported their satisfaction levels as 1, 2, or 3, and equal to 0 otherwise.[7]

Other outcome variables employed in the individual-level analysis are derived from the WVS survey item: "Taking all things together, would you say you are: very happy, quite happy, not very happy, not at all happy." By normalizing responses to this item to mean zero and standard deviation of one, we constructed the *Happiness Index*, incorporating both evaluative and hedonic components of SWB. Furthermore, to capture the upper tale of the happiness measure, we code *Happy* equal to 1 if the respondent is 'quite happy' or 'very happy,' and zero otherwise; and to reflect the lower tale of the happiness measure, we create *Unhappy*, which takes the value of 1 if the respondent is 'not at all happy' and 0 otherwise.

5. Empirical Strategy

Following upon Arbatlı et al. (2020), we estimate the effect of population diversity on subjective well-being using equation (1):

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[6] We use the integrated data for our analysis ((Inglehart et al., 2022), specifically version EVS/WVS 1981-2022 trend file (v3.0; Dec 14, 2022), which is available at https://www.worldvaluessurvey.org/WVSEVStrend.jsp

[7] For a similar construction of the variables capturing the tails of SWB, see Proto and Oswald (2017).

(1) $$SWB_i = \alpha + \beta AAPD_i + \Phi\Pi_i + K_c + \eta_i$$

where SWB_i represents subjective well-being in country i, $AAPD_i$, the key explanatory variable, is the ancestry-adjusted genetic diversity; Π_i contains a set of country-level exogenous control variables, which includes mean elevation, dispersion in elevation, total land area, absolute latitude, terrain roughness, land suitability for agriculture, range of land suitability, mean distance to the nearest waterway, island nation dummy, precipitation, and temperature; K_c corresponds to continent fixed effects, and η_i is the idiosyncratic error term.

Because the AAPD is adjusted based on post-1500 migration flows, β may be biased if the factors determining population movements also relate to subjective well-being. For example, if people moved away from more diverse societies to the New World to escape the challenges imposed by a competitive social ecology and to pursue happiness, our estimates might overestimate the negative effect of population heterogeneity. Alternatively, if more ambitious individuals, failing to balance their aspirations and achievements, migrated to the New World, our estimates may underestimate the effect of β.

Following Arbatlı et al. (2020) and Galor and Klemp (2017), we exploit two strategies to address this potential caveat. First, the population diversity of the nations in the Old World has been minimally influenced by the post-1500 migrations, as shown by the high (0.993) correlation between predicted population diversity and ancestry-adjusted population diversity. Therefore, excluding the Americas and Oceania addresses the limitations induced by the population movements since the 16^{th} century. Moreover, we make use of migratory distance to East Africa as an instrumental variable (IV), which predicts AAPD. Conditional on continent fixed effects, geographic factors, and climatic conditions, the IV methodology assumes that distance to Addis Ababa via prehistorical migratory routes does not directly impact the outcomes of interest. Accordingly, population diversity affects the contemporary SWB through social environmental channels, determined by the influence of historic diversity on the natural selection of cultural traits and current diversity levels.

Equation (2) estimates the first stage impact of pre-historic migratory distance to East Africa on AAPD:

$$(2) \qquad AADP_c = \lambda_0 + \lambda_1 MDIST_c + \lambda_2 X_c + C_c + \mu_c$$

where MDIST is the migratory distance to Addis Ababa, and the rest of the coefficients and covariates mimic equation (1).

5. Main Results

5.1. Baseline Estimates

Table 1 presents the summary statistics of the variables used in the analysis. Panel A shows the mean values for ancestry-adjusted population diversity and country-level control variables. Panel B displays the descriptive statistics for SWB measures. Finally, Panel C presents the conventional diversity indicators.[8]

We begin our analysis in Table 2 by focusing on life satisfaction, life ladder, positive affect, negative affect, and affect balance, which are alternative measures reflecting cognitive and emotional assessments of SWB. Panel A presents the univariate estimates. In column (1), we find that a one-percentage-point increase in population diversity lowers the *Life Satisfaction Index (WDH)* by 0.18 standard deviations. An identical increase in *AAPD* is associated with a 0.14 standard deviation decline in *Life Ladder* in column (2). Finally, an exact amount of change in diversity reduces the *Affect Balance Scale* by 0.15 standard deviations in column (5) while decreasing *Positive Affect* by 0.20 standard

[8] The Data Appendix provides a detailed description of the variables used in the analysis.

deviations in column (3). The estimated coefficients are statistically significant at the one percent level in all cases, except for the negative effect in column (4).

In Panel B, we control for continent-fixed effects to capture the unobserved heterogeneity across continents. Accounting for continent-specific unobservable determinants of SWB causes the estimated coefficients in columns (1), (2), and (3) to decrease by 67, 64.5, and 9.8 percent, respectively, while the coefficient for the *Affect Balance Scale* in column (5) is almost unaffected. This pattern implies that population diversity is not randomly distributed across different parts of the world, and continent-specific unobserved factors have played an important role in the relationship between diversity and subjective well-being. Thus, failing to control for continent-fixed effects may lead to biased estimates of β.

In Panel C, we control for geographic and climatic covariates, including absolute latitude, terrain ruggedness, mean elevation, soil suitability for agriculture, mean annual temperature, diurnal temperature range, and distance to the nearest waterway. Accounting for these variables leads to a modest increase in the magnitude of coefficient estimates. Specifically, a one-percentage-point rise in diversity in the first two columns lowers the WDH *Life Satisfaction Index* by 0.07 standard deviations. In columns (2) and (5), *Life Ladder* and *Affect Balance Scale* decline by 0.07 and 0.16 standard deviations in response to a one-percentage-point increase in interpersonal diversity. Similarly, it leads to a decrease in *Positive Affect* by 0.18 standard deviations and an increase in *Negative Affect* by 0.09 standard deviations. Upon the inclusion of these controls, the impact on *Negative Affect* becomes significant at conventional levels. The partial effect of population diversity on the measures of SWB is illustrated in Figure 3A.

Next, in Panel D, we control conventional diversity measures. Evidence suggests that the indexes of fractionalization and polarization have limited power to capture the true extent of diversity (Esteban and Ray, 1994; Duclos et al., 2004), but interpersonal diversity indicator address their limitations (Arbatlı et al., 2020). In particular, the fractionalization index captures the probability of two randomly picked individuals belonging to different groups within a country. Relying on the idea of "us" versus "them," the polarization index, a conceptually more grounded measure, reflects the extent of separation among clustered groups, depending on within-group dispersion and across-group distance (Esteban and Ray, 1994; Duclos et al., 2004). However, since it is a distributional index based on the fractional representation of different groups, such an indicator can still fail to account for within-group heterogeneity and, therefore, the true extent of the competitiveness of the macroenvironment. Furthermore, the ambiguity regarding the basis for defining the distance between any two groups poses additional challenges for the operationalization of these indices. For example, in practice, the distance is often reduced to a binary indicator that equals one for between-group pairs and zero for within-group pairs (Montalvo and Reynal-Querol, 2005). This implies that such indices are limited when it comes to gauging the extent of between- and within-group preference heterogeneity. Our diversity measure captures the interpersonal differences within-ethnic groups and incorporates between-group heterogeneity; therefore, it addresses these shortcomings (Arbatlı et al., 2020).

In panel D, controlling for conventional diversity measures, including the number of ethnic groups, ethnic fractionalization, ethnolinguistic polarization, and religious fractionalization, does not alter our conclusions. We only observe a slight increase in the magnitude of the estimated coefficient on population diversity.[9]

Moreover, in all models that control for conventional diversity measures, only one specification (i.e., the effect of ethnic fractionalization on *Negative Affect*) produces a statistically

[9] In addition to these conventional diversity indicators, in unreported specifications, we explored the robustness of our specifications to controlling for the Historical Religious Fragmentation Index, a newly introduced measure by Coşgel et al. (2023) emphasizing historical diversity rather than diversity based on current religious adherence data. This exercise did not change our estimates.

significant estimate. This exercise shows that conventional diversity measures are poor predictors of our outcomes of interest. This finding is consistent with the argument that standard diversity indicators fail to represent the true extent of diversity (Arbatlı et al., 2020).

Upon noting that genetic diversity surpasses conventional diversity metrics, we now, in accordance with (Arbatlı et al., 2020), focus on our population diversity measure and divide it into within-group and between-group diversity. Through this activity, we may assess which aspect of diversity is more responsible for the misery caused by diversity. The results presented in Panel E of Table 2 indicate that the within-group component of population diversity seems to be of greater significance in explaining SWB.

5.2. Old World Sample and Instrumental Variable Estimates

Even after accounting for continent-specific heterogeneity and within-continent climatic and geographic variables responsible for determining the pre-historic migratory routes, the results presented in Table 2 may be biased if population movements since the 16th century were influenced by diversity. For example, if people moved further away from their homelands to pursue happiness, our findings may overestimate the detrimental impact of diversity on SWB and vice-versa.

To get a handle on the potential influence of post-1500 migrations, we restrict our sample to the Old World and perform instrumental variable estimation in Panels A and B of Table 3, respectively. The results show that population movements since the 16th century mask diversity's impact on SWB. In the first two columns of the top panel, a one-percentage-point increase in diversity lowers average life satisfaction by 0.12 standard deviations in the WDH. In the third column, the life ladder declines by 0.08 standard deviations in response to a one-percentage-point increase in interpersonal diversity. Finally, in columns (3) and (5), positive affect and affect balance decline by 0.29 and 0.29 standard deviations, while negative affect increases by 0.19 standard deviations (column 4) in response to a one-percentage-point increase in diversity. The partial effect of population diversity on the measures of SWB is illustrated in Figure 3B.

Next, we implement the instrumental variable specification. As shown in Panel B of Table 3, the first-stage estimates document a strong relationship between the IV and our endogenous covariate. Every thousand-mile increase in distance to Addis Ababa via migration routes leads to a 0.7 percentage-point decline in AAPD, regardless of the estimation sample. The second stage estimates in Panel B of Table 3 show a precisely estimated inverse relationship between diversity and SWB. The findings in Panel B are similar to the Old World sample estimates in Panel A. Therefore, we will focus on the IV results in interpreting the estimated coefficients. Compared to the results shown in the Panel C of Table 2, the IV estimates are 39 (*Life Satisfaction* in WDH), 30.8 (*Life Ladder* in WHR), 40.5 (*Positive Affect*), 48.1 (*Negative Affect*), and 42.9 (*Affect Balance Scale*) percent larger in magnitude in columns (1) to (5), respectively. All in all, these exercises demonstrate that failing to account for post-1500 migrations attenuates the true effect of deep-rooted diversity on happiness. In the remaining part of the article, the results displayed in Table 3 constitute our preferred estimates because restricting the analysis to the Old World OLS sample and using the instrumental variable strategy at hand help us address the potential limitations induced by post-1500 population movements.

5.3. Individual Level Analysis of SWB

Rather than using the country-level aggregation of responses to survey questions, in this section, we examine the impact of diversity on SWB by relying on individual-level data from the WVS. We use the *Life Satisfaction Index* and *Happiness Index* in the WVS as outcome variables. To investigate the effect of interpersonal diversity on the tales of SWB distribution, we create indicators *Satisfied* and *Unsatisfied* from the life satisfaction and *Happy* and *Unhappy* from the happiness variable.

In the individual-level analysis, we additionally control for the age and gender of the respondents. Panels A and B of Table 4A show the Old World OLS and the full sample IV estimates. The *Life Satisfaction* (column 1) and *Happiness Indexes* (column 4) decrease by 0.11 and 0.09 standard deviations, respectively, in response to a one-percentage-point increase in population diversity. These findings confirm the results from the country-level analysis, presented in Table 3, that SWB decreases in population diversity.

The estimates in Table 4A also reveal that diversity has a greater impact on measures representing misery than those corresponding to joy and contentment. For example, in columns (2) and (3) of Panel A, while a one-percentage-point increase in interpersonal diversity decreases the probability of reporting being satisfied with life by 3.9 percentage points, it increases the probability of an individual being dissatisfied with her life by 4.8 percentage points. Likewise, while the probability of being happy in column (5) decreases by 1.9 percentage points, the probability of being unhappy in column (6) increases by 3.3 percentage points in response to a one-percentage-point increase in population diversity.

The distributions of responses to questions capturing SWB illustrated in Figure 5 show the low frequency of responses at the lower tail of the distribution. This pattern may raise concerns about whether the main findings are driven by small but highly miserable groups in the population. Therefore, exploiting individual-level data, we employ an ordered probit model to capture the impact of population diversity across the entire distribution of SWB. Table 4B displays the marginal effects from ordered-probit models. As population diversity increases, the probability of individuals reporting lower values of SWB (on a given life satisfaction and happiness scale) increases, while the probability of people reporting higher values of SWB decreases. The ordered probit models show that diversity impacts life satisfaction and happiness across the entire distribution of SWB; therefore, our results are not driven by the misery of a small subsample of the population.

5.4. Heterogeneity by Education and Income

We also estimate the impact of diversity on SWB by stratifying the participants in each country at different levels (lower, medium, and upper) of education and income to investigate further whether the results are driven by the misery of a smaller subsample of the population. Old World sample OLS estimates in Table 5A and the global sample IV estimates in Table 5B yield results similar to the main findings across different education and income levels. Hence, this exercise bolsters our conclusion in the previous subsection that our results are not driven by a highly miserable small subset of the population.

5.5. Does Deep-Rooted Diversity Non-Linearly Impact Subjective Well-Being?

Before scrutinizing the resilience of our estimates to a battery of sensitivity tests in the next section, we now explore whether and to what extent deep-rooted diversity has a non-linear impact on SWB, which may happen if increases in diversity place differential pressures on SWB at different diversity levels. Panels A and B of Appendix Table 1 display the Old World sample OLS and global sample IV estimates of our SWB indicators on the quintiles of population diversity, with the first quintile being the reference category. These results do not point to a significant non-linear relationship because diversity's impact on SWB intensifies as one moves up the higher quantiles of diversity. Therefore, we conclude that the linear specifications we use in our models are ideal for gauging the impact of diversity on SWB.

6. Robustness

6.1. Robustness to Controlling for Potentially Endogenous Aggregate Indicators

We start the sensitivity analysis by investigating if and to what degree controlling for conventional country-level indicators, including income, population, legal origin fixed effects, colonial history dummies, and standard diversity measures, explain β. In Appendix Tables 2A and 2B, we present our estimates for the Old World OLS and full sample IV specifications, respectively, without and with controlling for these covariations. Results from this exercise recommend that controlling for these arguably endogenous variables does not significantly affect the estimated relationship between deep-rooted diversity and SWB indicators.

6.2. Robustness to Controlling for Genetic Distance to Denmark

Proto and Oswald (2017) show that genes explain part of the variation in cross-national SWB. In particular, they document an inverse relationship between happiness and genetic distance to Denmark, the happiest nation in the world. They ascribe this finding to the prevalence of 5-HTTLPR polymorphism, which is positively linked to clinical depression (Caspi et al., 2003). As we have argued in Section 2 and extensively discussed by (Ashraf and Galor, 2018), our diversity measure operates through the social environment, even though it is derived from within-ethnic genetic heterozygosity. To investigate whether our argument holds, we test the robustness of estimates to controlling for pairwise genetic distances to Denmark. As displayed in Appendix Table 3, conditioning our models to genetic distance to Denmark does not appreciably impact our findings, although we observe a slight increase in the magnitudes of the coefficients on AAPD. Having noted that caution should be exhibited when interpreting the findings from this exercise because there are differences in the interpretation of what pairwise genetic distances between countries measure. While Proto and Oswald (2017) interpret it as a proxy for the prevalence of a specific gene, which is a precursor of happiness, Spolaore and Wacziarg (2009) use it as an indicator representing the amount of time passed since the separation of two populations from their last common ancestors.

6.3. Robustness to Selection on Observables and Unobservables

While the estimates obtained in the Old World sample and from the instrumental variable strategy, shown in Table 3, increase our confidence in the credibility of our findings, we further scrutinize the robustness of our estimates to making use of Oster's (2019) omitted variables bias test, which extends Altonji et al. (2005). By monitoring the changes in the coefficient of interest and the R-squared statistic in response to the addition of control variables, this method evaluates how strongly the unobservables need to be associated with diversity, compared to observables, to absorb the coefficient of interest. As suggested by Oster (2019), we set the R_{max} value to 1.3 times the R-squared statistic of the model accounting for observables and assume that both observable and unobservable factors carry equal weights in determining happiness, i.e., Oster's δ is equated to 1. We present the estimates derived from this exercise in Appendix Table 4. These statistics imply that our findings cannot be explained by the unobservable determinants of subjective well-being. As Oster's beta values are remarkably larger than the corresponding baseline estimates, we infer that our findings represent the lower-bound effect of population diversity on life satisfaction and affect balance.

6.4. Robustness to Spatial Autocorrelation

We explore the resilience of our findings to addressing spatial autocorrelation, given that neighboring nations exhibit similar population diversity levels and experience spillovers from one another due to cultural similarities and facing similar geographic, climatic, and political constraints. In Appendix Table 5, we undertake a maximum likelihood estimator, advanced by Drukker et al. (2013), allowing for first-order spatial autoregression in the dependent variable and the disturbance term (SARAR (1,1)). Results from this exercise are similar to those presented in Table 3.

6.5. Excluding Africa and the Middle East

African nations have historically performed worse than other parts of the world in SWB rankings.[10] As our identifying variation in diversity comes from distance to East Africa via migratory tracks, one may question whether our results are driven by the systemic differences between Africa and the rest of the planet Earth. Appendix Table 6A shows that excluding Africa does not cause a reduction in the size of the estimated coefficients on population diversity. In Appendix Table 6B, repeating the exercise by dropping the nations of the Middle East in addition to African countries leads us to similar findings. Across these two tables, this robustness check produces larger effect sizes than the baseline results and suggests that our findings are not driven by the African and Middle Eastern nations.

6.6. Addressing Potential Connectedness to Other Nations

A threat to the credibility of our findings may stem from the potential correlation between distance to Addis Ababa and cultural connectedness to other nations. In the current era, we control for pairwise genetic distance to the contemporary economic frontier to address this issue because cultural proximity to the most prosperous nations may be associated with economic well-being, which may also influence the SWB of a country (Spolaore and Wacziarg, 2009). Appendix Table 7 shows that our estimates are highly resilient to undertaking this exercise. Then, to address the potential relatedness to historical economic powers, we control for the closest distances to regional economic frontiers in the year 1500. We find in Appendix Table 8 that accounting for proximity to historical regional economic frontiers has no bearing on our estimates.

6.7. Addressing Concerns Related to the Cardinal Treatment of Ordinal Variables

[10] https://www.africanews.com/2017/03/21/why-africa-is-less-happy-than-the-rest-of-the-world//

Recent work questions the credibility of happiness research due to issues related to the comparability of ordinal SWB scales across countries (Schröder and Yitzhaki, 2017; Bond and Lang, 2019). Employing different methods, these studies show that the estimates of happiness indexes, constructed based on the cardinal treatment of ordinal variables, can be sensitive to monotonic transformations and concluded that the results from such models could be biased and misleading (Bloem 2022). As our outcome measures are derived from ordinal dependent variables, it is incumbent upon us to investigate the resilience of our findings to this criticism.

We undertook three strategies to address the described potential shortcomings of happiness scales. Nevertheless, it is worth mentioning that both Bond and Lang (2019) and Schröder and Yitzhaki (2017) discuss that relying on dichotomous indicators, like our measures of happy, unhappy, satisfied, and dissatisfied, is immune to this issue. Our analyses of the effect of diversity on SBW in the previous section help us address these concerns by estimating the effect of diversity on the tales of happiness and life satisfaction distribution.

First, we apply the *dichotomous-around-the-median (DAM) test*, proposed by Bloem and Oswald (2022). To avoid reliance on arbitrary cutoffs, the authors intentionally eliminate some information gauged by the ordinal scale. They base the validity of their method on the fact that although the magnitude of the intervals between different ranks of an ordinal variable is not always known, its approximate direction is known reliably well. Thus, they address the shortcomings of employing ordered response variables at the expense of losing valuable statistical information. Accordingly, the DAM test employs dummy variables as dependent variables by compressing ordered response scales to binary indicators. As hinted by the method's name, the dichotomous cutoff is applied around the median value of the responses. Bloem and Oswald (2022) conclude that the resilience of the estimates to the DAM test implies the main findings' robustness to rank-preserving transformations. In Appendix Table 9, we created our dependent variables as suggested by the DAM method and re-estimated our models. Consistent with our baseline findings, these results show that self-reported happiness and life satisfaction decline in diversity.

Second, Schröder and Yitzhaki (2017) suggest that employing Gini's Mean Difference (GMD) approach addresses the problems induced by the cardinal treatment of ordinal variables. Based on the GMD estimates, we obtain the Normalized Line of Independence minus the Absolute Concentration Curve (NLMA) of population diversity with respect to life satisfaction and happiness in Appendix Figure 1, which allows us to evaluate the sensitivity of our estimates.[11] The results suggest that it is impossible to reverse the sign of the estimated effect via the monotonic transformation of SWB measures since the NLMA does not cross the horizontal axis in the figure.

Finally, we use the partial identification method proposed by Bloem (2022) and implement the global concave and convex transformations of underlying latent SWB scales to further scrutinize the resilience of our estimates. Appendix Figures 2 show the estimated effects from this exercise on life satisfaction and happiness measures using individual-level WVS data. The findings support the robustness of our estimates to the concave and convex transformation of SWB measures as the precision of our estimates is within the boundaries of conventional statistical significance levels, and the signs of the coefficients are in the expected direction.

7. Mechanisms

In this section, we conduct several exercises to uncover the potential mediating channels from population diversity to SWB. We start by examining the impact of deep-rooted diversity on subjective (i.e., perceived) and objective measures of the quality of the social environment. Then, we investigate the impact of home country diversity on the SWB levels of first- and second-generation immigrants in Europe and the United States, enabling us to gauge the role of the current social

[11] We use the Stata module GINIREG developed by Shaffer (2015) to conduct this analysis.

environment in explaining the impact of diversity on SWB. Finally, we investigate whether humans adapt to diversity.

7.1. The Role of the Social Environment

Recall that the evolutionary approach defines happiness as a function of the interaction between evolved psychological tendencies and social ecology, with happiness decreasing as the discord between the ancestral and current social environment widens. In parallel with this line of reasoning, evidence suggests that SWB is positively associated with perceived favorable evaluations of the social environment in which people reside, such as the heightened perception of the freedom of choice (Verme, 2009), perception of democracy (Frey and Stutzer, 2000; Helliwell et al., 2018), trust (Helliwell et al., 2020b). To explore the validity of this conjecture, using data from the WWS, we examine the impact of population diversity on self-reported social environment quality indicators, including the perception of freedom of choice, perception of democratic quality, and mistrust between unrelated individuals. Our estimates in Table 6 show that people's self-assessment of their social environment declines in diversity, measured by reduced perceived freedom of choice, democratic quality, and interpersonal trust.

Next, we explore objective social environment quality indicators as mechanisms. As discussed, a review of the associated literature recommends that deep-rooted diversity can impact macroenvironmental conditions through a number of channels, including barriers to achieving social cohesion, intrastate conflict, the competitiveness of the social environment, income, institutional development, and its effects on the adoption of cultural traits (Ashraf and Galor, 2018). Accordingly, we employ composite social-ecological quality indicators in exploring whether and to what extent the social environment explains our findings, given that deep-rooted diversity impacts the social environment through multiple and potentially opposing channels. We prefer composite measures to unidimensional covariates because the latter fails to capture the complex effects of deep-rooted diversity on the social environment.

Our multidimensional social environment quality indicators come from the Fund for Peace (FFP). We employ the comprehensive social environment quality indicator, the *Fragile States Index (FSI),* in addition to sub-indices gauging social cohesion, political stability, and the dispersion of economic opportunities. The social cohesion indicators include the *Security Apparatus*, *Factionalized Elites*, and *Group Grievance* indexes. The *Security Apparatus* index captures threats to the state's monopoly on the use of power, the severity of criminal activity, and the extent of citizens' trust in domestic security. It also includes if and how much state power is used to repress various types of political opposition. The *Factionalized Elites* index depicts power struggle and political competition among groups fragmented along ethnic, religious, or other identity lines. This measure also incorporates identity politics, nationalism, xenophobia, and the perceived legitimacy of ruling elites. Finally, the *Group Grievance* index, focusing on divisions among social groups, captures grievances emerging from communal violence, discriminatory treatment of groups in access to resources and political process, religious or racial segregation, and the lack of appropriate post-conflict responses to oppressed groups. This index also incorporates group-level deep-rooted grievances and injustices that have been taking place for centuries.

We employ the *State Legitimacy* and *Human Rights and Rule of Law* indexes to focus on the political environment. The *State Legitimacy* index evaluates countries concerning people's confidence in state institutions, the state's ability to collect taxes, the level of corruption in government, the occurrence of political protests and political violence, and the existence of an open and fair political process. The *Human Rights & Rule of Law* index captures whether fundamental human rights and freedoms are protected or violated, the impartiality of the justice system is maintained, and the freedom of the press and accessing information is guaranteed. Finally, we use the *Uneven Economic*

Development index to measure inequality in economic opportunities. This index focuses on structural inequality based on social groups, education, economic status, and region and considers the perception of inequality by citizens and unequal opportunities in access to education, employment, and job training.

Finally, our comprehensive social environment quality indicator, the FSI, is constructed based on the aggregation of twelve key political, social, and economic indicators and more than 100 sub-indicators that are calculated by evaluating millions of documents using the Conflict Assessment System Tool (CAST), a content analysis platform, together with quantitative data and expert validations. This index ranges between 0 and 100, with larger values indicating higher levels of state fragility. We use standardized versions of these indexes in the analysis.

In Table 7, we show that deep-rooted diversity has large and precisely estimated adverse effects on the measures of composite social environment indicators. For example, in Panel B, a one percentage point increase in population diversity worsens FSI by 0.13 standard deviations. Moreover, the impact of a one-percentage-point increase in diversity on sub-indicators ranges between 0.09 and 0.17 standard deviations.

In Tables 8A and 8B, we explore if and to what extent the quality of the social environment explains the links from diversity to SWB for the Old World OLS and global IV specifications, respectively. In each case, column (1) shows the impact of diversity, and columns (2) to (7) control for *Factionalized Elites, Group Grievance, State Legitimacy, Human Rights and Rule of Law*, and *Uneven Economic Development*, in that order. Then, column (8) controls for the overall composite index, the FSI. Panels A and B show the estimates of life satisfaction and affect balance in both tables. We find that our social environment quality indicators explain up to nearly 84 percent of the impact of diversity on the life satisfaction index. In Panel B, results show that the quality of the social environment absorbs up to roughly one-fourth of the impact of diversity on the *Affect Balance Scale*, a hedonic measure of SWB.

7.2 Evidence from the First- and Second-Generation Immigrants in ESS and GSS.

To further investigate the role of social environment in determining SWB, we now focus on first- and second-generation immigrants in Europe and the United States. This exercise allows us to see the impact of diversity net of the social environment. Using individual-level data from the European Social Survey (ESS) and General Social Survey (GSS), we compare the impact of home-country population diversity on the SWB of first- and second-generation immigrants. Similar to our main analysis, we employ indexes for life satisfaction, happiness, and affect balance as outcome variables.[12]

In Table 9, columns (1) to (3) are devoted to the estimates of life satisfaction, happiness, and affect balance in the ESS sample. Column (4) presents the happiness results in the GSS sample. Panels A and B show the estimates for the first- and second-generation immigrants, respectively. All models control for baseline home country characteristics and sub-region-by-year fixed effects, purging any effect the current social ecology may have.[13]

Among first-generation immigrants, we aim to understand the role of the social environment in which a person was raised in determining their SWB, even after neutralizing the influence of their current social environment. The findings in Panel A show that first-generation immigrants' home country population diversity continues to haunt their SWB. In particular, life satisfaction, happiness, and affect balance decline as home country diversity increases. These findings suggest that being raised in the home-country social environment has lingering impacts on the SWB of first-generation

[12] See Data Appendix for the definitions of these variables.
[13] Sub-region-by-year fixed effects subsume country and region fixed effects by construction.

immigrants. This result is consistent with evidence documenting the prominence of the childhood social environment in determining a person's future outcomes and preferences (Abeler et al., 2023).

Then, we explore whether and to what extent these impacts continue over generations. The coefficient estimates become smaller and imprecisely estimated among second-generation immigrants in Panel B, recommending that the misery of parental home country population diversity dissipates among second-generation immigrants as they are nurtured in a social ecology different from their parents.

These findings also provide evidence supporting the argument that the impact of our measure of population diversity operates through the macroenvironment rather than specific genes associated with misery.

7.3. Evidence on Mechanisms Mitigating the Misery of Diversity

Research suggests that individuals may adapt to diversity by developing mechanisms to cope with the difficulties posed by a competitive social milieu (Ramos et al., 2019). Among such mechanisms, we consider attitudes toward competition, the presence of strong family ties, and the importance of friendship in the analysis, as research shows that a positive perception of competition (Grasseni and Origo, 2018), strong family ties (Diener and Seligman, 2002), and friendship (Demir et al., 2013) can improve SWB.

Following Alesina and Giuliano (2010), we quantify family ties by using three different variables from WVS that capture the attitudes towards the importance of family in one's life, the respect and love for parents, and the responsibilities of parents to their children. We construct the *Family Ties Index* based on these variables using principal component analysis; the higher values of the resulting index indicate stronger family ties and vice versa. We measure attitudes toward competition with the WVS item asking respondents if competition is good or harmful. After rescaling it, this variable takes values ranging from 1 (=competition is harmful) to 10 (=competition is good). We create the variable *Competition Good* by standardizing the values of this survey item to mean zero and a standard deviation of one. Lastly, we use a survey question measuring the importance of friends in a respondent's life. Possible answers are "Very important (=1)," "Rather important (=2)," "Not very important (=3)," and "Not at all important (=4)." We create the variable *Friends Important* by standardizing the replies after rescaling this item to have greater values indicating a higher importance of having friends.

Table 10 presents the estimates of the impact of diversity on these measures. The results reveal that population diversity leads to believing that competition is beneficial (column 1), the formation of strong family ties (column 2), and placing greater importance on friendship (column 3). These variables are positively associated with SWB, as shown in columns (4)-(6). Column (7) shows the baseline estimate of the impact of population diversity on SWB in the estimation sample. Controlling for *Competition Good*, *Family Ties Index,* and *Friends Important* in column (8) suggests that if there were no counterbalancing effects of these variables, diversity-induced misery would further increase by almost 12.8% in the Old World sample and 11.5% in the global sample. Therefore, these results recommend that humans adapt to diversity by adopting more favorable attitudes toward competition and placing greater importance on family and friends, although the net impact of social diversity on SWB is negative.

8. Conclusion and Discussion

Building on evolutionary accounts and using a historical natural experiment, this research examines the impact of deep-rooted diversity, a first-order determinant of social environment, on SWB. We find robust evidence that human subjective well-being, including life satisfaction, happiness, and affect balance, declines in diversity. Our findings are consistent with arguments stating that the misery of diversity is an evolutionary trap caused by the mismatch it creates between the ancestral and current social environments via reduced social cohesion, retarded state capacity, elevated mistrust, and increased inequality of economic opportunities.

We show evidence among first- and second-generation immigrants in Europe and the USA that while home country diversity continues to hurt the SWB of first-generation immigrants, such effects weaken among the second-generation, suggesting that long-run improvements in the social environment can mitigate the misery of diversity over generations. We complete our analysis by documenting evidence aligning with arguments that humans adapt to diversity by adopting a favorable attitude toward competition and assigning greater importance to family and friends.

What policy implications do these results offer, considering the unprecedented diversity levels of today's world, where billions of people live in social environments with high levels of anonymous human interaction and complexity? In line with the argument that resistance to multiculturalism is a byproduct of the evolution of the human brain, our findings recommend that simplistic approaches to curbing the never-ending diversity aversion, such as the expectation that living side-by-side is sufficient to induce favorable intergroup contact, may fall short of the projections, in the absence of policies designed to focus on the evolutionary foundations of resistance to diversity, such as the problem of prejudice (Crisp and Meleady, 2012). However, as our results among second-generation immigrants in Europe and the USA imply, social environment improvements can attenuate the misery of diversity in the long run (Helliwell, 2020b).

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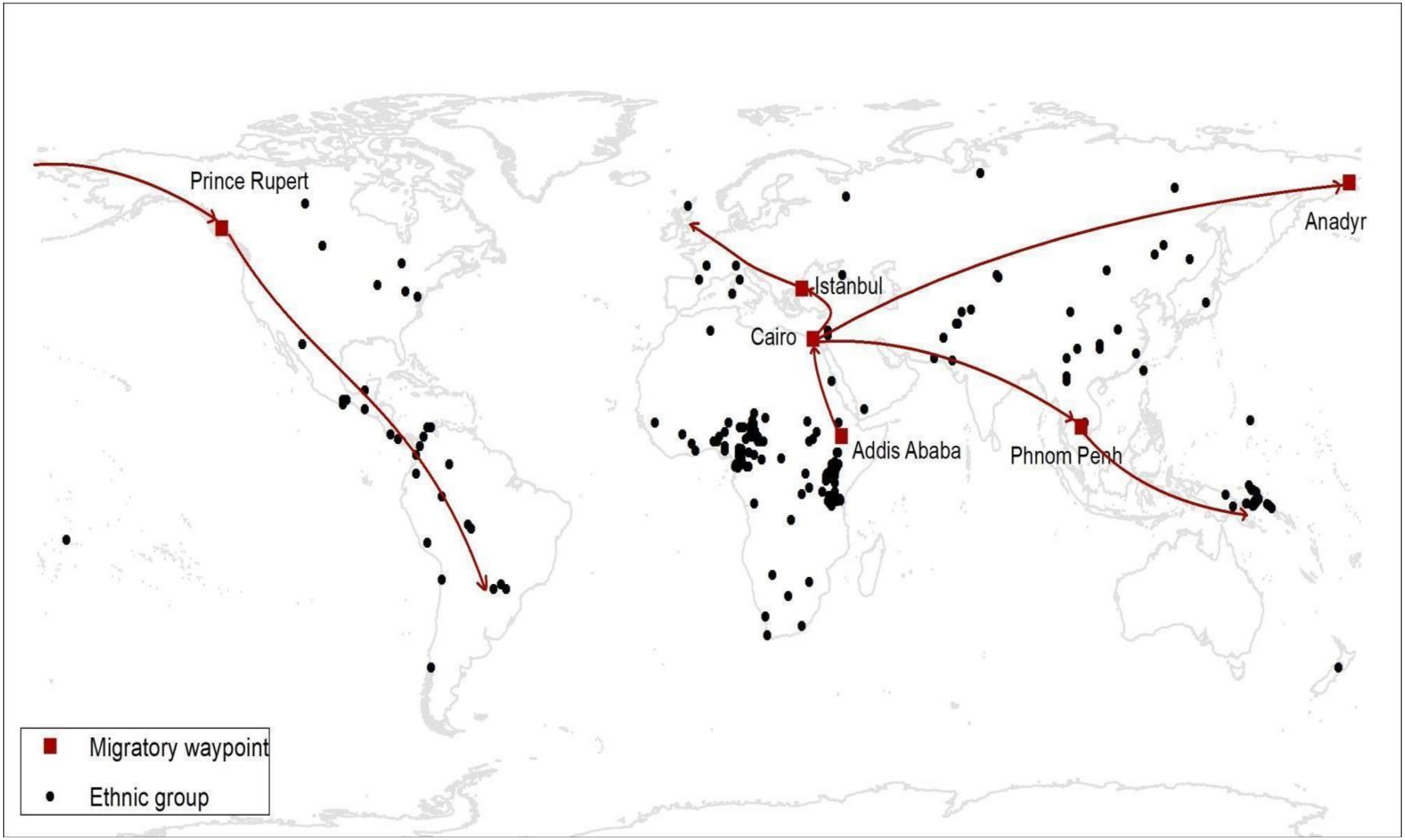


Figure 1. Migratory Paths from Addis Ababa and the Distribution of Ethnic Groups with Observed Population Diversity

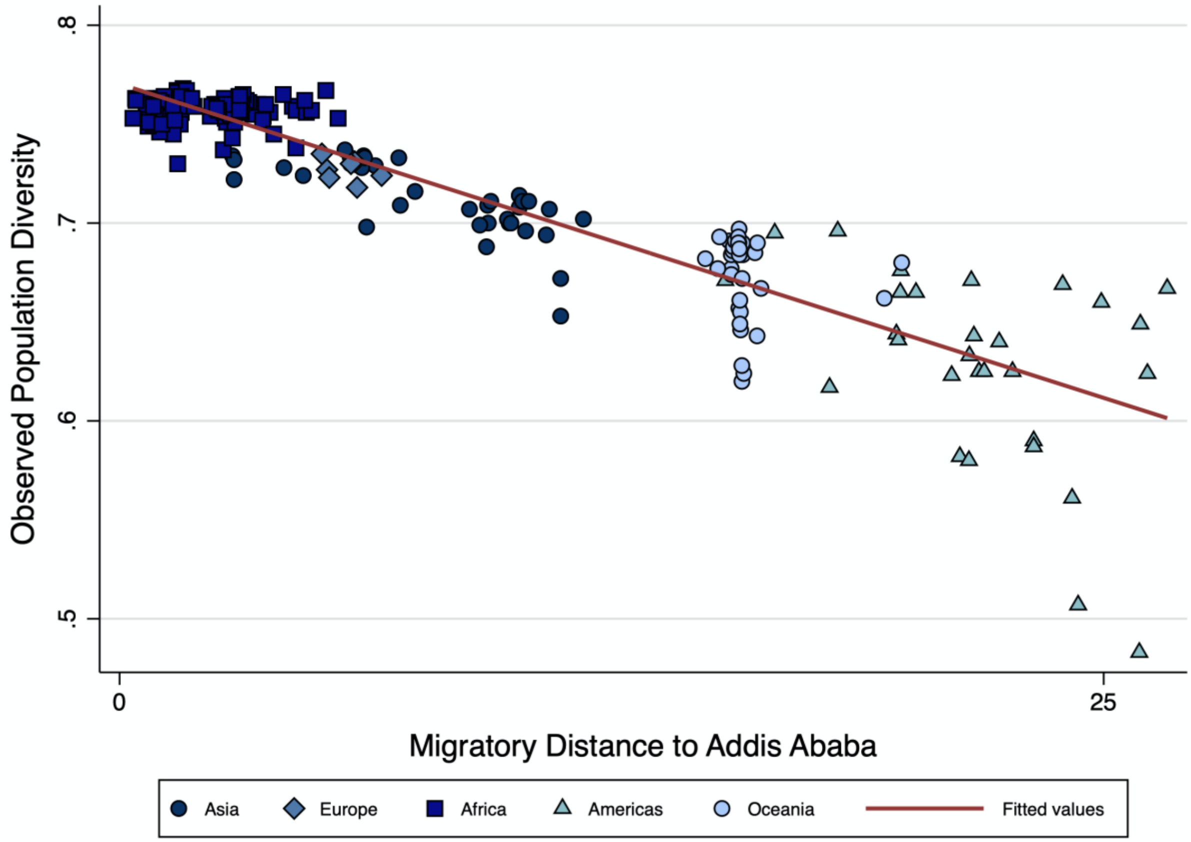


Figure 2. Relationship Between Observed Population Diversity and Migratory Distance to Addis Ababa for 232 Ethnic Groups in Pemberton et al. (2013).

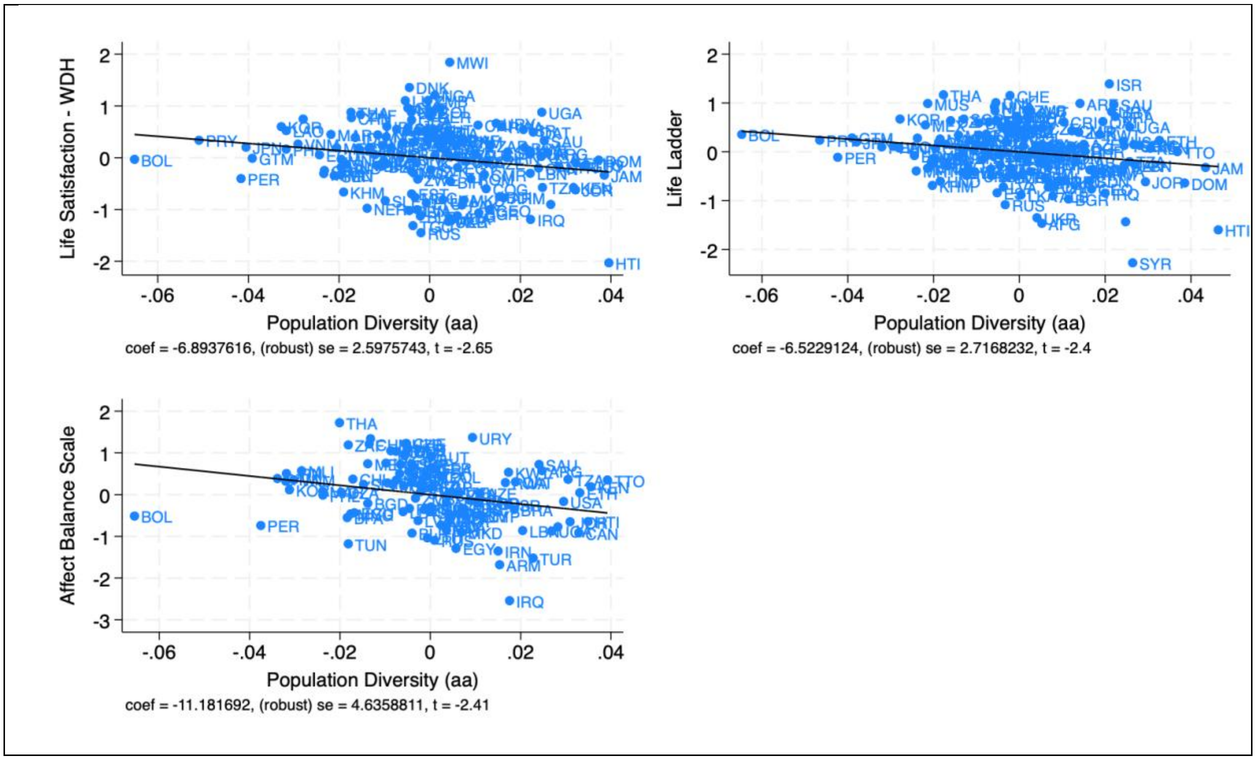


Figure 3A. Partial Effect of Population Diversity on the Measures of SWB (Global Sample OLS)

Notes: This figure shows the partial effect of population diversity on the measures of SWB for the global sample conditional on continent fixed-effects and geographical controls as in Panel C of Table 2.

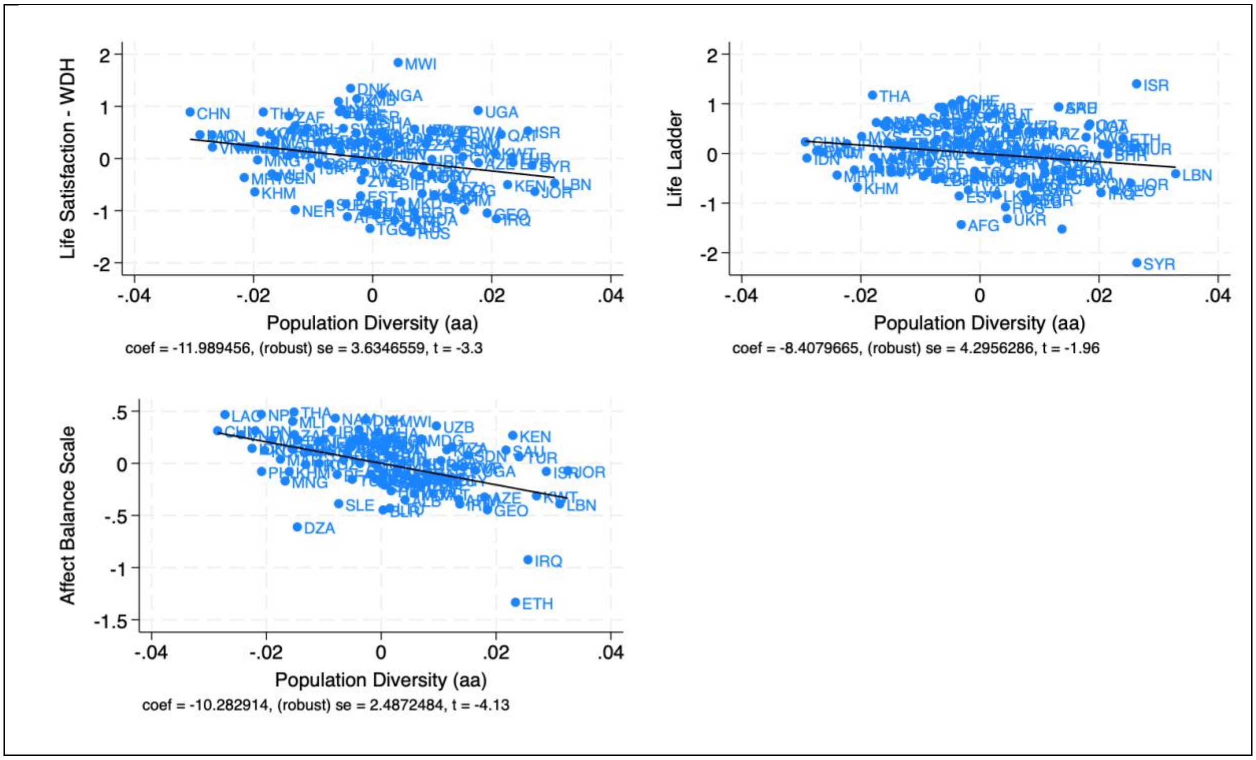


Figure 3B. Partial Effect of Population Diversity on the Measures of SWB (Old World Sample OLS)

Notes: This figure shows the partial effect of population diversity on the measures of SWB for the Old World sample conditional on continent fixed-effects and geographical controls as in Panel A of Table 3.

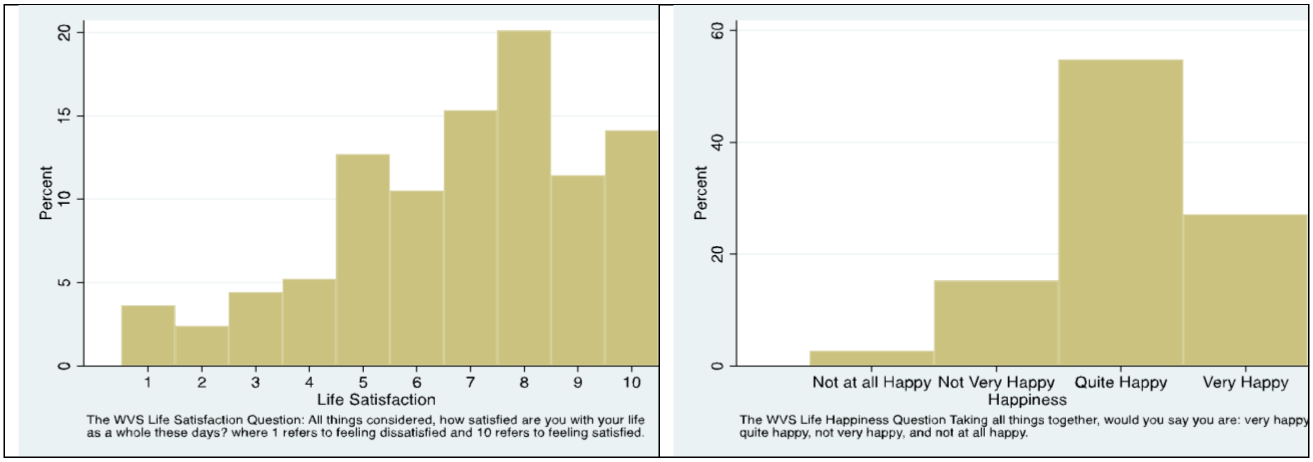


Figure 5. Distribution of Life Satisfaction and Happiness in the World Values Survey

Table 1. Summary Statistics

Variable	N	Mean	SD	Min	Max
Panel A: Population Diversity and Control Variables					
Population diversity (aa)	151	0.73	0.03	0.63	0.77
Migratory distance	151	8.09	6.76	0	26.77
Absolute latitude	151	27.59	17.13	0.53	64.48
Temperature, mean	151	17.74	8.27	-6.38	28.4
Elevation, range	151	2614.75	1829.62	40	7358
Elevation, mean	151	603.86	566.55	-82.17	3073.79
Ruggedness	151	1.33	1.25	0.02	6.74
Distance to Coast	151	0.37	0.43	0	2.21
Island Nation	151	0.09	0.29	0	1
Caloric suitability, mean	151	1228.09	646.17	0	2742.76
caloric suitability, std.	151	361.67	249.04	0	1127.3
Europe	151	0.25	0.43	0	1
Asia	151	0.28	0.45	0	1
Oceania	151	0.01	0.11	0	1
North America	151	0.07	0.25	0	1
South America	151	0.09	0.29	0	1
Africa	151	0.3	0.46	0	1
Panel B: Subjective Well-Being Indicators					
Life Satisfaction Index, WDH	140	5.84	1.32	2.6	8.5
Life Ladder, WHR	151	5.37	1.1	3.08	7.6
Affect Balance	151	0.71	0.1	0.41	0.89
Negative Affect	151	0.28	0.08	0.14	0.66
Positive Affect	151	0.43	0.16	-0.25	0.68
Panel C: Conventional Diversity Indicators					
Number of ethnic groups	151	5.21	3.51	1	22
Ethnic fractionalization	151	0.45	0.26	0	0.93
Religious fractionalization	151	0.42	0.24	0	0.86
Ethno-linguistic polarization	151	0.46	0.25	0	0.96

Data Appendix provides a detailed description of the variables displayed in this table

Table 2. The Impact of Diversity on Subjective Well-Being Indexes

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A: No controls					
Population diversity (aa)	-18.297***	-14.284***	-19.708***	4.386	-15.043***
	(2.594)	(2.278)	(2.551)	(3.363)	(3.060)
Observations	140	151	151	151	151
R-squared	0.239	0.140	0.273	0.013	0.158
Panel B: Continent FE					
Population diversity (aa)	-6.264**	-5.196*	-17.760***	6.831	-15.047***
	(2.890)	(3.106)	(4.150)	(4.911)	(4.662)
Observations	140	151	151	151	151
R-squared	0.506	0.541	0.333	0.118	0.219
Panel C: Continent FE + Controls					
Population diversity (aa)	-6.894***	-6.523**	-17.638***	8.959*	-16.070***
	(2.598)	(2.717)	(4.167)	(4.902)	(4.681)
Observations	140	151	151	151	151
R-squared	0.605	0.680	0.390	0.243	0.301
Panel D: C + Conventional Diversity Indicators					
Population diversity (aa)	-7.410***	-7.407**	-17.863***	9.300*	-16.392***
	(2.774)	(2.890)	(4.523)	(5.062)	(4.982)
Number of Ethnic Groups	0.013	-0.002	0.021	-0.038	0.033
	(0.026)	(0.018)	(0.026)	(0.031)	(0.029)
Ethnic Fractionalization	-0.187	0.343	-0.114	1.069**	-0.628
	(0.368)	(0.348)	(0.484)	(0.445)	(0.466)
Ethno-linguistic Polarization	-0.309	-0.154	-0.036	-0.465	0.217
	(0.275)	(0.250)	(0.326)	(0.344)	(0.336)
Religious Fractionalization	0.054	0.148	-0.102	-0.330	0.105
	(0.315)	(0.232)	(0.424)	(0.408)	(0.436)
Observations	139	151	151	151	151
R-squared	0.612	0.684	0.393	0.273	0.312
Panel E: Within versus Between Diversity					
Within-Group Population Diversity	-5.250	-5.311	-16.124***	9.137	-15.181**
	(3.364)	(3.780)	(5.822)	(7.018)	(6.660)
Between-Group Population Diversity	0.520	-2.053	-7.346	5.021	-7.361
	(4.596)	(4.570)	(7.300)	(8.106)	(7.946)
F-test of Joint Significance P-value	*0.030*	*0.163*	*0.001*	*0.134*	*0.003*
Observations	132	141	141	141	141
R-squared	0.612	0.694	0.403	0.262	0.308

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Exogenous controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability.

Table 3. The Impact of Diversity on Subjective Well-Being Indexes, Old World Sample and Instrumental Variable Estimates

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A: Old World OLS					
Population diversity (aa)	-11.989***	-8.408*	-29.313***	19.189**	-28.934***
	(3.635)	(4.296)	(5.616)	(7.664)	(6.620)
Observations	112	125	125	125	125
R-squared	0.533	0.651	0.305	0.293	0.308
Panel B: Global Sample IV					
Second Stage					
Population diversity (aa)	-11.280***	-9.435**	-29.651***	17.266**	-28.157***
	(3.353)	(4.110)	(5.560)	(7.016)	(6.345)
First Stage					
	Population diversity (aa)	Population diversity (aa)	Population diversity (aa)	Population diversity (aa)	Population diversity (aa)
Migratory Distance to Addis Ababa	-0.007***	-0.007***	-0.007***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	140	151	151	151	151
R-squared	0.771	0.774	0.774	0.774	0.774
First-Stage F-test	86.10	112.7	112.7	112.7	112.7

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, mean and standard deviation of caloric suitability, and binary Europe, Asia, Oceania, North America, South America continent identifiers, with Africa being the reference category. Panel A excludes Americas and Oceania.

Table 4A. The Impact of Diversity on Life Satisfaction and Happiness, Individual-Level Analysis, WVS

VARIABLES	(1) Life Satisfaction Index	(2) Satisfied	(3) Unsatisfied	(4) Happiness Index	(5) Happy	(6) Unhappy
Panel A. Old World OLS						
Population Diversity (aa)	-11.240***	-3.936***	4.849***	-8.534***	-1.912*	3.305***
	(2.135)	(0.839)	(0.874)	(2.174)	(1.044)	(0.589)
Observations	528,252	528,252	528,252	525,115	525,115	525,115
R-squared	0.087	0.059	0.077	0.055	0.036	0.047
Dependent Variable Mean	-0.0681	0.427	0.308	-0.0497	0.247	0.190
Panel B. Global IV						
Population Diversity (aa)	-9.695***	-3.082***	4.468***	-7.473***	-1.083	3.318***
	(2.848)	(1.157)	(1.184)	(2.481)	(1.011)	(0.856)
Observations	639,840	639,840	639,840	633,600	633,600	633,600
F-test of excluded instrument	66.08	66.08	66.08	68.48	68.48	68.48

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, the month of interview fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. The Old World sample excludes Oceania and the Americas. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1.

Table 4B. The Impact of Diversity on Life Satisfaction and Happiness, Individual-Level Analysis, Marginal Effects from Ordered Probit Estimates, WVS

Index Value	(1) Old World OLS Life Satisfaction	(2) Global IV	Index Value	(3) Old World OLS Happiness	(4) Global IV Happiness
P(Feeling Dissatisfied = 1)	0.913***	0.719***	P(Not at all Happy: = 1)	0.627***	0.505***
	(0.196)	(0.246)		(0.179)	(0.191)
P(= 2)	0.466***	0.360***	P(Not very Happy: = 2)	1.854***	1.555***
	(0.111)	(0.125)		(0.513)	(0.554)
P(= 3)	0.717***	0.558***	P(Quite Happy: = 3)	0.416***	0.514***
	(0.145)	(0.180)		(0.153)	(0.180)
P (= 4)	0.658***	0.530***	P (Very Happy: = 4)	-2.897***	-2.573***
	(0.126)	(0.165)		(0.781)	(0.894)
P (= 5)	1.051***	0.883***	--	--	--
	(0.186)	(0.264)	--	--	--
P (= 6)	0.420***	0.391***	--	--	--
	(0.076)	(0.114)	--	--	--
P (= 7)	0.011	0.100**	--	--	--
	(0.051)	(0.046)	--	--	--
P (= 8)	-0.951***	-0.676***	--	--	--
	(0.194)	(0.218)	--	--	--
P(= 9)	-1.066***	-0.851***	--	--	--
	(0.215)	(0.265)	--	--	--
P(Feeling Satisfied: = 10)	-2.221***	-2.014***	--	--	--
	(0.414)	(0.626)	--	--	--
Observations	521,484	638,285		519,300	638,285

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, the month of interview fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Old World sample excludes Oceania and the Americas. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1.

Table 5A. The Impact of Diversity on Life Satisfaction and Happiness, Heterogeneity by Education and Income, WVS, Old World Sample OLS

VARIABLES	(1) Life Satisfaction Index	(2) Satisfied	(3) Unsatisfied	(4) Happiness Index	(5) Happy	(6) Unhappy
Panel A. Lower Education						
Population Diversity (aa)	-11.069***	-3.354***	4.627***	-7.775***	-1.084	3.302***
	(2.344)	(0.878)	(1.022)	(2.519)	(1.021)	(0.744)
Observations	132,935	132,935	132,935	133,141	133,141	133,141
R-squared	0.096	0.066	0.088	0.057	0.031	0.052
Dependent Variable Mean	-0.209	0.376	0.378	-0.147	0.240	0.236
Panel B. Middle Education						
Population Diversity (aa)	-13.324***	-4.961***	5.701***	-9.975***	-2.358**	3.903***
	(2.280)	(0.825)	(0.961)	(2.122)	(0.999)	(0.605)
Observations	201,774	201,774	201,774	201,111	201,111	201,111
R-squared	0.102	0.067	0.086	0.067	0.050	0.053
Dependent Variable Mean	-0.0873	0.418	0.314	-0.0466	0.247	0.189
Panel C. Upper Education						
Population Diversity (aa)	-9.754***	-4.000***	4.285***	-7.544***	-2.098**	2.678***
	(1.836)	(0.799)	(0.794)	(1.801)	(0.917)	(0.514)
Observations	124,518	124,518	124,518	124,288	124,288	124,288
R-squared	0.084	0.066	0.078	0.046	0.037	0.035
Dependent Variable Mean	0.0441	0.470	0.253	0.0692	0.275	0.141
Panel D. Lower Income						
Population Diversity (aa)	-11.603***	-3.386***	4.761***	-7.576***	-0.865	3.274***
	(2.643)	(0.896)	(1.055)	(2.535)	(1.019)	(0.808)
Observations	150,832	150,832	150,832	149,502	149,502	149,502
R-squared	0.103	0.067	0.094	0.056	0.034	0.051
Dependent Variable Mean	-0.371	0.327	0.441	-0.298	0.192	0.289
Panel E. Middle Income						
Population Diversity (aa)	-10.529***	-4.121***	4.631***	-7.749***	-1.812*	3.036***
	(1.914)	(0.821)	(0.851)	(2.034)	(1.014)	(0.527)
Observations	230,628	230,628	230,628	229,905	229,905	229,905
R-squared	0.071	0.050	0.061	0.050	0.037	0.040
Dependent Variable Mean	-0.0288	0.418	0.285	0.00998	0.257	0.163
Panel F. Upper Income						
Population Diversity (aa)	-11.395***	-5.192***	4.695***	-10.586***	-3.922***	3.117***
	(1.899)	(0.908)	(0.704)	(1.773)	(1.030)	(0.470)
Observations	86,116	86,116	86,116	85,547	85,547	85,547
R-squared	0.079	0.060	0.068	0.077	0.067	0.044
Dependent Variable Mean	0.254	0.580	0.175	0.169	0.311	0.112

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, the month of interview fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. The Old World sample excludes Oceania and the Americas. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 5B. The Impact of Diversity on Life Satisfaction and Happiness, Heterogeneity by Education and Income, WVS, Global Sample IV

VARIABLES	(1) Life Satisfaction Index	(2) Satisfied	(3) Unsatisfied	(4) Happiness Index	(5) Happy	(6) Unhappy
Panel A. Lower Education						
Population Diversity (aa)	-10.582***	-2.956**	4.610***	-7.346**	-0.379	3.556***
	(3.200)	(1.174)	(1.356)	(2.835)	(1.017)	(1.025)
Observations						
F-test of excluded instrument	155,877	155,877	155,877	154,821	154,821	154,821
Dependent Variable Mean	-0.132	0.408	0.354	-0.104	0.261	0.229
Panel B. Middle Education						
Population Diversity (aa)	-11.935***	-4.053***	5.481***	-8.549***	-1.171	3.999***
	(3.373)	(1.329)	(1.426)	(2.581)	(1.009)	(0.990)
Observations	244,902	244,902	244,902	243,043	243,043	243,043
F-test of excluded instrument	55.19	55.19	55.19	57.44	57.44	57.44
Dependent Variable Mean	-0.0205	0.447	0.291	0.00624	0.272	0.179
Panel C. Upper Education						
Population Diversity (aa)	-7.402***	-2.798***	3.620***	-5.754***	-1.070	2.427***
	(2.091)	(0.956)	(0.933)	(1.840)	(0.811)	(0.649)
Observations	153,811	153,811	153,811	153,166	153,166	153,166
F-test of excluded instrument	72.68	72.68	72.68	74.21	74.21	74.21
Dependent Variable Mean	0.105	0.500	0.230	0.120	0.300	0.131
Panel D. Lower Income						
Population Diversity (aa)	-10.557***	-2.668*	4.571***	-6.592**	-0.032	3.309***
	(3.835)	(1.401)	(1.542)	(2.952)	(1.020)	(1.147)
Observations	187,550	187,550	187,550	184,714	184,714	184,714
F-test of excluded instrument	55.78	55.78	55.78	58.95	58.95	58.95
Dependent Variable Mean	-0.259	0.370	0.402	-0.222	0.223	0.271
Panel E. Middle Income						
Population Diversity (aa)	-8.767***	-3.206***	4.151***	-6.447***	-0.990	2.911***
	(2.435)	(1.088)	(1.075)	(2.144)	(0.944)	(0.704)
Observations	281,864	281,864	281,864	279,998	279,998	279,998
F-test of excluded instrument	77.21	77.21	77.21	79.27	79.27	79.27
Dependent Variable Mean	0.0407	0.452	0.260	0.0592	0.281	0.154
Panel F. Upper Income						
Population Diversity (aa)	-8.488***	-3.674***	3.677***	-8.490***	-2.929***	2.665***
	(2.045)	(1.014)	(0.767)	(1.774)	(0.937)	(0.536)
Observations	100,622	100,622	100,622	99,672	99,672	99,672
F-test of excluded instrument	74.08	74.08	74.08	79.63	79.63	79.63
Dependent Variable Mean	0.295	0.601	0.162	0.211	0.334	0.105

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, the month of interview fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. The Old World sample excludes Oceania and the Americas. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1.

Table 6. The Impact of Population Diversity on Self-Reported Social Environment Quality, WVS

VARIABLES	(1) Freedom of Choice Index	(2) Perception of Democracy Index	(3) Interpersonal Trust
Panel A. Old World OLS			
Population Diversity (aa)	-4.753***	-12.524***	-9.894***
	(1.373)	(2.805)	(2.199)
Observations	513,336	230,910	511,315
R-squared	0.036	0.076	0.064
Dependent Variable Mean	-0.065	-0.009	0.026
Panel B. Global IV			
Population Diversity (aa)	-3.423**	-13.401***	-8.871***
	(1.692)	(3.668)	(2.629)
Observations	620,873	290,417	621,372
F-test of excluded instrument	66.93	65.85	66.31
Dependent Variable Mean	0.000	0.000	0.000

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, the month of interview fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. The Old World sample excludes Oceania and the Americas. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1.

Table 7. The Impact of Diversity on Composite Social Environment Indicators

VARIABLES	(1) Fragile States Index	(2) Security Apparatus	(3) Fractionalized Elites	(4) Group Grievance	(5) Lack of State Legitimacy	(6) Human Rights & Rule of Law	(7) Uneven Economic Development
Panel A. Old World OLS							
Population diversity (aa)	11.255***	11.251***	17.019***	16.290***	13.143***	10.141***	9.401***
	(3.377)	(4.045)	(3.764)	(4.168)	(3.804)	(3.559)	(3.481)
Observations	131	131	131	131	131	131	131
R-squared	0.667	0.574	0.539	0.514	0.601	0.670	0.615
Panel B. Global IV							
Population diversity (aa)	12.585***	12.580***	16.460***	16.619***	14.223***	10.571***	10.711***
	(3.415)	(3.855)	(3.895)	(4.078)	(3.858)	(3.288)	(3.450)
Observations	161	161	161	161	161	161	161
F-test of excluded instrument	122.4	122.4	122.4	122.4	122.4	122.4	122.4

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability, and binary Europe, Asia, Oceania, North America, South America continent identifiers, with Africa being the reference category. Panel A excludes Americas and Oceania.

Table 8A. Descriptively Exploring the Role of Social Ecology, Old World Sample OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. Life Satisfaction								
Population Diversity	-11.626***	-5.159	-4.213	-6.292	-3.638	-5.483	-5.366	-1.810
	(3.631)	(3.571)	(3.932)	(4.095)	(4.034)	(4.014)	(4.060)	(3.682)
Security Apparatus		-0.456***						
		(0.080)						
Factionalized Elites			-0.373***					
			(0.087)					
Group Grievance				-0.271***				
				(0.090)				
State Legitimacy					-0.538***			
					(0.085)			
Human Rights and the Rule of Law						-0.496***		
						(0.099)		
Uneven Economic Development							-0.451***	
							(0.093)	
Fragile States Index								-0.659***
								(0.084)
Observations	111	111	111	111	111	111	111	111
R-squared	0.532	0.625	0.604	0.571	0.658	0.623	0.617	0.681
Panel B. Life Ladder								
Population Diversity	-8.372*	-2.701	-1.722	-3.587	-1.512	-3.638	-3.099	-0.194
	(4.296)	(4.064)	(4.385)	(4.378)	(4.140)	(3.998)	(4.248)	(3.894)
Observations	124	124	124	124	124	124	124	124
R-squared	0.651	0.718	0.707	0.682	0.726	0.707	0.719	0.755
Panel C. Affect Balance								
Population Diversity	-28.978***	-22.643***	-22.902***	-24.243***	-23.450***	-24.403***	-23.648***	-21.821***
	(6.664)	(6.053)	(6.768)	(6.764)	(6.476)	(6.350)	(6.678)	(6.212)
Security Apparatus		-0.445***						
		(0.117)						
Factionalized Elites			-0.315***					
			(0.101)					
Group Grievance				-0.247**				
				(0.115)				
State Legitimacy					-0.359***			
					(0.115)			
Human Rights and the Rule of Law						-0.395***		
						(0.135)		
Uneven Economic Development							-0.435***	
							(0.107)	
Fragile States Index								-0.500***
								(0.141)
Observations	124	124	124	124	124	124	124	124
R-squared	0.308	0.387	0.352	0.337	0.354	0.358	0.374	0.384

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, the mean and standard deviation of caloric suitability, and binary Europe and Asia continent identifiers, with Africa being the reference category. This table excludes Americas and Oceania.

Table 8B. Descriptively Exploring the Role of Social Ecology, Global Sample IV Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. Life Satisfaction								
Population Diversity	-11.686***	-4.573	-4.476	-5.767*	-2.791	-5.196	-5.018	-0.753
	(3.337)	(3.008)	(3.105)	(3.336)	(3.212)	(3.335)	(3.430)	(3.029)
Security Apparatus		-0.449***						
		(0.069)						
Factionalized Elites			-0.369***					
			(0.074)					
Group Grievance				-0.298***				
				(0.078)				
State Legitimacy					-0.531***			
					(0.071)			
Human Rights and the Rule of Law						-0.502***		
						(0.087)		
Uneven Economic Development							-0.451***	
							(0.083)	
Fragile States Index								-0.653***
								(0.075)
Observations	138	138	138	138	138	138	138	138
F-test of excluded instrument	86.75	100.8	87.72	85.24	106.5	86.88	93.68	102.2
Panel B. Life Ladder								
Population Diversity	-9.396**	-3.322	-2.756	-4.085	-1.846	-4.213	-3.578	-0.167
	(4.134)	(3.666)	(3.891)	(3.937)	(3.613)	(3.664)	(3.937)	(3.544)
Observations	150	150	150	150	150	150	150	150
F-test of excluded instrument	110.1	125.2	105.4	107.1	131.6	110.3	119.3	124.3
Panel C. Affect Balance								
Population Diversity	-28.504***	-21.540***	-21.888***	-22.912***	-21.635***	-23.866***	-22.793***	-20.181***
	(6.442)	(5.326)	(5.925)	(5.982)	(5.624)	(5.849)	(6.162)	(5.462)
Security Apparatus		-0.448***						
		(0.106)						
Factionalized Elites			-0.347***					
			(0.092)					
Group Grievance				-0.287***				
				(0.105)				
State Legitimacy					-0.405***			
					(0.106)			
Human Rights and the Rule of Law						-0.384***		
						(0.125)		
Uneven Economic Development							-0.427***	
							(0.103)	
Fragile States Index								-0.524***
								(0.125)
Observations	150	150	150	150	150	150	150	150
F-test of excluded instrument	110.1	125.2	105.4	107.1	131.6	110.3	119.3	124.3

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, the mean and standard deviation of caloric suitability, and binary Europe and Asia continent identifiers, with Africa being the reference category. This table excludes Americas and Oceania.

Table 9. The Impact of Ancestral Population Diversity on the Happiness of First and Second Generations---Evidence from ESS and GSS

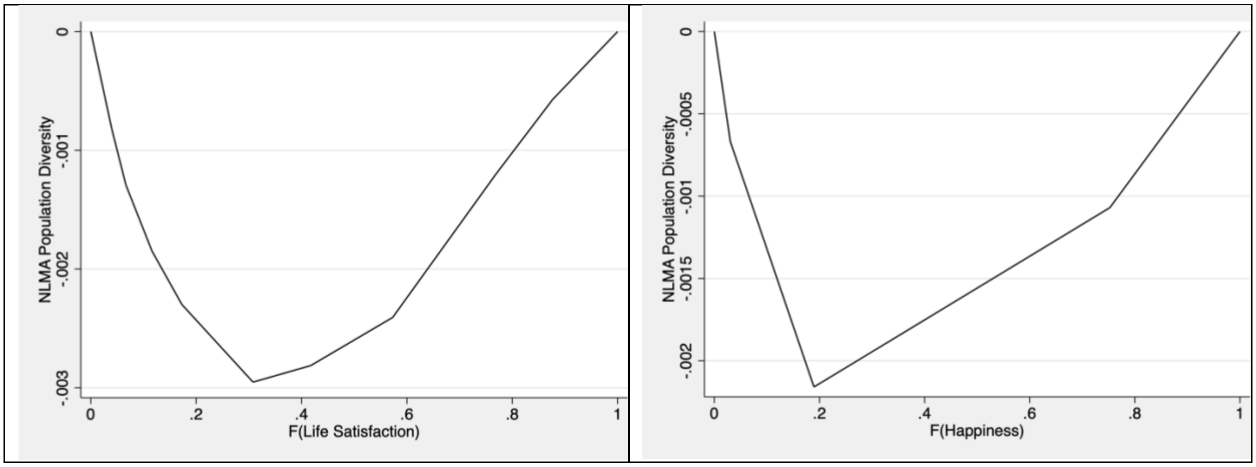
VARIABLES	(1) Life Satisfaction	(2) Happiness	(3) Affect Balance	(4) Happiness
Panel A. First-Generation Immigrants				
Population diversity (ancestral)	-1.255*	-1.950***	-2.977***	-10.682***
	(0.673)	(0.626)	(0.690)	(1.408)
Observations	20,024	20,000	8,307	2,964
R-squared	0.182	0.148	0.127	0.127
Panel B. Second-Generation Immigrants				
Population diversity (ancestral)	0.523	-0.849	-1.173*	0.590
	(0.627)	(0.625)	(0.687)	(1.916)
Observations	22,559	22,523	9,757	3,934
R-squared	0.215	0.167	0.122	0.109
Data Source	ESS	ESS	ESS	GSS

Note: Standard errors are two-way clustered at the sub-region and the ancestral country level and reported in parentheses. ***p<0.01, ** p<0.05, * p<0.1. Gender, age, and destination country sub-region-by-survey-year fixed effects are included. Ancestral controls include continent-fixed effects and geographic controls, including absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability.

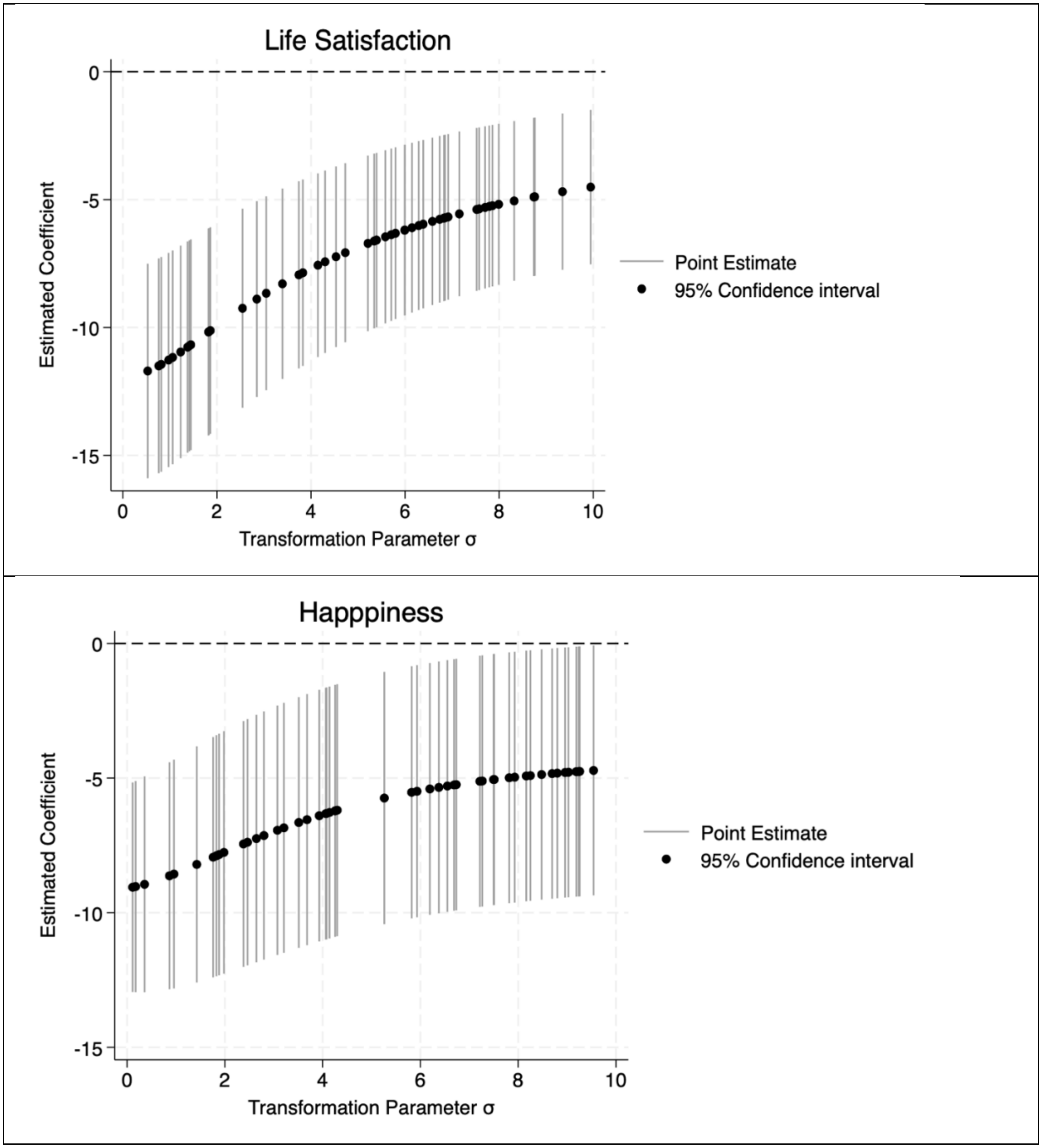
Table 10. Evidence on Coping Mechanisms for the Misery of Diversity

VARIABLES	(1) Competition Good	(2) Family Ties Index	(3) Friends Important	(4) Life Satisfaction	(5) Life Satisfaction	(6) Life Satisfaction	(7) Life Satisfaction	(8) Life Satisfaction
Panel A. Old World OLS								
Population Diversity	4.262**	8.745***	4.272**				-10.305***	-11.622***
	(2.069)	(2.139)	(1.996)				(3.491)	(3.373)
Competition Good				0.042***				0.058***
				(0.008)				(0.008)
Family Ties Index					0.037***			0.036***
					(0.008)			(0.006)
Friends Important						0.096***		0.102***
						(0.008)		(0.009)
Observations	466,474	238,896	508,482	462,424	234,858	502,301	206,919	206,919
R-squared	0.022	0.089	0.036	0.074	0.109	0.080	0.118	0.132
Panel B. Global IV								
Population Diversity	5.749**	8.619***	3.707				-11.496**	-12.822***
	(2.193)	(2.210)	(2.320)				(4.743)	(4.618)
Competition Good				0.044***				0.056***
				(0.006)				(0.007)
Family Ties Index					0.040***			0.041***
					(0.007)			(0.006)
Friends Important						0.097***		0.116***
						(0.007)		(0.009)
Observations	562,602	275,784	609,430	558,139	271,530	602,698	239,546	239,546
F-test of excluded instrument	69.28	69.06	67.77	--	--	--	39.88	40.96

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, the month of interview fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. The Old World sample excludes Oceania and the Americas. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1.



Appendix Figure 1: The above figures display the normalized line of independence minus the absolute concentration curve (NLMA) of population diversity with respect to life satisfaction and happiness. Since NLMA does not cross the horizontal axis, it is not possible to reverse the sign of the estimated effect via the monotonic transformation of SWB measures. Using individual-level data from the WVS, these graphs are created based on Gini regressions conditioning on age, gender, continent fixed effects, survey wave fixed effects, and geographic controls.



Appendix Figure 2: Robustness to the global concave and convex transformation of life satisfaction as suggested by Bloem (2022). The Old World sample OLS and global sample IV estimates are displayed on the left and right panels, respectively.

Appendix Table 1. The Impact of Diversity on Subjective Well-Being Indexes, Test of Non-linearity

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Global Sample					
Population diversity (aa) 2nd Quintile	-0.261	-0.014	-0.374	0.272	-0.384
	(0.162)	(0.189)	(0.257)	(0.240)	(0.240)
Population diversity (aa) 3rd Quintile	-0.416**	-0.185	-1.060***	0.468	-0.929***
	(0.197)	(0.211)	(0.287)	(0.315)	(0.299)
Population diversity (aa) 4th Quintile	-0.831***	-0.406*	-1.327***	0.787**	-1.268***
	(0.190)	(0.213)	(0.257)	(0.305)	(0.248)
Population diversity (aa) 5th Quintile	-0.561**	-0.556**	-1.583***	1.105***	-1.599***
	(0.252)	(0.235)	(0.295)	(0.400)	(0.343)
Observations	140	151	151	151	151
R-squared	0.637	0.695	0.482	0.302	0.404
Panel B. Old World Sample					
Population diversity (aa) 2nd Quintile	-0.281	-0.104	-0.386	0.454	-0.486
	(0.234)	(0.250)	(0.349)	(0.339)	(0.364)
Population diversity (aa) 3rd Quintile	-0.622***	-0.279	-1.008***	0.407	-0.864***
	(0.201)	(0.232)	(0.302)	(0.334)	(0.289)
Population diversity (aa) 4th Quintile	-0.591***	-0.242	-1.034***	0.776**	-1.072***
	(0.221)	(0.213)	(0.271)	(0.304)	(0.280)
Population diversity (aa) 5th Quintile	-0.331	-0.506**	-1.328***	1.088**	-1.424***
	(0.224)	(0.251)	(0.328)	(0.470)	(0.419)
Observations	112	125	125	125	125
R-squared	0.543	0.658	0.308	0.308	0.312

Note: All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability, and binary Europe, Asia, Oceania, North America, South America continent identifiers, with reference category being Africa. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 2A. The Impact of Diversity on SWB Indicators, OLD World Sample, Controlling for Potentially Endogenous Covariates

VARIABLES	(1) Life Satisfaction	(2) Life Satisfaction	(3) Life Ladder	(4) Life Ladder	(5) Affect Balance	(6) Affect Balance
Population diversity	-12.617***	-10.871**	-10.037**	-6.533	-29.495***	-25.497***
	(3.629)	(4.124)	(4.836)	(4.757)	(7.049)	(7.312)
Log GDP		0.488***		0.509***		0.542***
		(0.076)		(0.082)		(0.114)
Log Population		0.154**		0.200***		0.242***
		(0.075)		(0.059)		(0.090)
Legal Origin: French civil law		-0.217		-0.339**		-0.590**
		(0.169)		(0.164)		(0.260)
Legal Origin: German civil law		-0.051		0.229		0.154
		(0.277)		(0.252)		(0.343)
Legal Origin: Scandinavian law		0.882***		0.908***		1.218***
		(0.285)		(0.230)		(0.376)
Legal Origin: Socialist law		-0.342		-0.084		0.490
		(0.242)		(0.235)		(0.369)
U.K. Colony		-0.268		-0.461**		-0.352
		(0.170)		(0.198)		(0.260)
French Colony		-0.250		-0.255		-0.343
		(0.178)		(0.226)		(0.314)
Non-U.K./non-French Colony		-0.180		-0.121		0.113
		(0.191)		(0.150)		(0.264)
Number of Ethnic Groups		0.007		0.005		0.036
		(0.025)		(0.017)		(0.030)
Ethnic Fractionalization		0.267		0.754***		-0.124
		(0.401)		(0.266)		(0.462)
Religious Fractionalization		-0.062		0.121		0.636
		(0.321)		(0.265)		(0.419)
Ethno-linguistic Polarization		-0.045		-0.140		-0.208
		(0.268)		(0.238)		(0.420)
Observations	108	108	108	108	108	108
R-squared	0.522	0.757	0.659	0.854	0.377	0.628

Note: All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability, and binary Europe, Asia, Oceania, North America, and South America continent identifiers, with Africa being the reference category. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 2B. The Impact of Diversity on SWB Indicators, Global Sample IV Estimates, Controlling for Potentially Endogenous Covariates

VARIABLES	(1) Life Satisfaction	(2) Life Satisfaction	(3) Life Ladder	(4) Life Ladder	(5) Affect Balance	(6) Affect Balance
Population diversity	-13.556***	-12.967***	-10.614**	-8.773**	-28.828***	-28.745***
	(3.694)	(4.104)	(4.526)	(4.314)	(6.869)	(7.560)
Log GDP		0.517***		0.472***		0.417***
		(0.064)		(0.064)		(0.108)
Log Population		0.085		0.113**		0.113
		(0.059)		(0.046)		(0.078)
Legal Origin: French civil law		-0.167		-0.326**		-0.637**
		(0.132)		(0.145)		(0.286)
Legal Origin: German civil law		-0.188		0.193		-0.306
		(0.281)		(0.222)		(0.399)
Legal Origin: Scandinavian law		0.684***		0.634***		0.518
		(0.210)		(0.189)		(0.364)
Legal Origin: Socialist law		-0.405**		-0.250		0.007
		(0.168)		(0.175)		(0.304)
U.K. Colony		-0.135		-0.277*		0.093
		(0.148)		(0.160)		(0.275)
French Colony		-0.304**		-0.239*		-0.368*
		(0.133)		(0.125)		(0.192)
Non-U.K./non-French Colony		-0.208		0.024		0.369
		(0.155)		(0.119)		(0.249)
Number of Ethnic Groups		0.008		-0.010		0.019
		(0.020)		(0.015)		(0.027)
Ethnic Fractionalization		0.323		0.943***		-0.013
		(0.299)		(0.217)		(0.388)
Religious Fractionalization		-0.315		-0.094		-0.104
		(0.241)		(0.221)		(0.384)
Ethno-linguistic Polarization		-0.066		-0.207		-0.276
		(0.232)		(0.204)		(0.408)
Observations	133	133	141	141	141	141
F-test of Excluded Instrument	82.01	46.33	96.62	62.55	96.62	62.55

Note: All models control for absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability, and binary Europe, Asia, Oceania, North America, and South America continent identifiers, with Africa being the reference category. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 3. The Impact of Diversity on Subjective Well-Being, Robustness to Controlling for Genetic Distance to Denmark

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A . Old World OLS					
Population Diversity (aa)	-11.128***	-7.333*	-27.463***	19.933**	-28.121***
	(3.622)	(4.218)	(5.541)	(7.764)	(6.700)
Population Diversity (aa)	-13.136***	-9.426**	-28.021***	19.515**	-28.266***
	(3.748)	(4.198)	(5.728)	(7.736)	(6.801)
Log Genetic distance to Denmark	-0.224**	-0.255***	-0.068	-0.051	-0.018
	(0.102)	(0.089)	(0.113)	(0.090)	(0.104)
Observations	108	121	121	121	121
R-squared	0.560	0.687	0.317	0.301	0.303
Panel B. Global IV					
Population diversity (aa)	-11.556***	-8.697**	-28.527***	17.953**	-28.621***
	(3.378)	(4.133)	(5.622)	(7.143)	(6.644)
Population diversity (aa)	-12.947***	-10.314**	-29.740***	18.050**	-28.621***
	(3.271)	(4.009)	(5.791)	(7.236)	(6.644)
Log Genetic distance to Denmark	-0.304***	-0.315***	-0.236**	0.019	-0.163*
	(0.081)	(0.073)	(0.105)	(0.076)	(0.098)
Observations	135	147	147	147	147
F-test of excluded instrument	82.83	99.40	99.40	99.40	99.40

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 4. The Impact of Diversity on Subjective Well-Being, Robustness to Selection on Observables and Unobservables

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Global OLS					
Population diversity (aa)	-6.894***	-6.523**	-17.638***	8.959*	-16.070***
	(2.598)	(2.717)	(4.167)	(4.902)	(4.681)
Observations	140	151	151	151	151
R-squared	0.605	0.680	0.390	0.243	0.301
Oster beta	-8.482	-8.923	-17.31	10.35	-17.41
Panel B. Old World OLS					
Population diversity	-11.989***	-8.408*	-29.313***	19.189**	-28.934***
	(3.635)	(4.296)	(5.616)	(7.664)	(6.620)
Observations	112	125	125	125	125
R-squared	0.533	0.651	0.305	0.293	0.308
Oster beta	-12.51	-6.642	-30.65	19.57	-30.18

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 5. The Impact of Diversity on Subjective Well-Being, Robustness to Accounting for Spatial Dependence (SARAR 1,1)

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Old World OLS					
Population diversity (aa)	-10.847***	-8.105**	-21.903***	17.086**	-21.230***
	(3.179)	(3.793)	(5.869)	(8.023)	(7.112)
lambda	0.985***	0.221	1.452***	0.883	1.467**
	(0.367)	(0.340)	(0.451)	(0.896)	(0.591)
rho	-0.769	-0.325	-0.154	-0.589	-0.321
	(0.815)	(0.469)	(0.717)	(0.827)	(0.720)
Observations					
	112	125	125	125	125
Panel B. Global IV					
Population diversity (aa)	-7.354**	-6.784**	-16.225***	9.403*	-14.275***
	(2.937)	(2.956)	(4.392)	(5.349)	(4.874)
lambda	0.774*	0.108	1.767***	1.445*	1.885***
	(0.453)	(0.437)	(0.466)	(0.760)	(0.601)
rho	-0.397	-0.106	-0.299	-0.847	-0.487
	(0.700)	(0.539)	(0.730)	(0.725)	(0.706)
Observations	140	151	151	151	151

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Appendix Table 6A. The Impact of Diversity on Subjective Well-Being, Robustness to Excluding Africa from the Estimation Sample

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Old World OLS					
Population diversity (aa)	-25.148***	-20.459***	-46.062***	22.075**	-41.282***
	(5.360)	(6.526)	(7.709)	(9.310)	(7.358)
Observations	75	79	79	79	79
R-squared	0.467	0.536	0.500	0.408	0.476
Panel B. Global IV					
Population diversity (aa)	-20.683***	-19.639***	-47.807***	25.124***	-43.992***
	(5.363)	(6.320)	(9.131)	(8.971)	(9.223)
Observations	103	105	105	105	105
F-test of Excluded Instrument	27.93	30.40	30.40	30.40	30.40

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 6B. The Impact of Diversity on Subjective Well-Being, Robustness to Excluding Africa and the Middle East from the Estimation Sample

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Old World OLS					
Population diversity (aa)	-26.701***	-20.355***	-43.507***	20.370**	-38.743***
	(7.310)	(7.297)	(8.435)	(9.955)	(7.875)
Observations	64	66	66	66	66
R-squared	0.481	0.608	0.489	0.480	0.498
Panel B. Global IV					
Population diversity (aa)	-22.635***	-21.357***	-46.856***	15.744*	-38.517***
	(7.647)	(7.423)	(11.904)	(8.202)	(10.117)
Observations	92	92	92	92	92
F-test of Excluded Instrument	13.79	14.05	14.05	14.05	14.05

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 7. The Impact of Diversity on Subjective Well-Being, Robustness to Controlling for Genetic Distance to the Current Economic Frontier (USA)

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Old World OLS					
Population diversity (aa)	-9.413**	-6.444	-23.931***	17.536**	-24.590***
	(3.766)	(4.387)	(5.414)	(7.572)	(6.579)
Observations	110	123	123	123	123
R-squared	0.552	0.665	0.329	0.308	0.319
Panel B. Global IV					
Population diversity (aa)	-11.805***	-9.484**	-28.799***	17.211**	-27.576***
	(3.555)	(4.210)	(5.793)	(7.290)	(6.641)
Observations	136	148	148	148	148
F-test of excluded instrument	79.88	99.33	99.33	99.33	99.33

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 8. The Impact of Diversity on Subjective Well-Being, Robustness to Controlling for Distance to the Regional Economic Frontier at 1500

VARIABLES	(1) Life Satisfaction	(2) Life Ladder	(3) Positive Affect	(4) Negative Affect	(5) Affect Balance
Panel A. Old World OLS					
Population diversity (aa)	-11.854***	-8.393*	-29.376***	19.299**	-29.032***
	(3.569)	(4.331)	(5.639)	(7.707)	(6.653)
Observations	112	125	125	125	125
R-squared	0.538	0.651	0.307	0.299	0.313
Panel B. Global IV					
Population diversity (aa)	-11.260***	-9.431**	-29.680***	17.280**	-28.183***
	(3.318)	(4.112)	(5.526)	(7.027)	(6.336)
Observations	140	151	151	151	151
F-test of excluded instrument	88.12	115.6	115.6	115.6	115.6

Note: All columns include continent-fixed effects and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix Table 9. Dichotomous Around the Mean Test

VARIABLES	(1) Life satisfaction (dichotomous upper)	(2) Life satisfaction (dichotomous lower)	(3) Happiness (dichotomous upper)	(4) Happiness (dichotomous lower)
Panel A. Old World OLS				
Population diversity (aa)	-4.606***	-3.936***	-3.305***	-1.912*
	(0.910)	(0.839)	(0.589)	(1.044)
Observations	528,252	528,252	525,115	525,115
R-squared	0.075	0.059	0.047	0.036
Panel B. Global IV				
Population diversity (aa)	-3.967***	-3.082***	-3.318***	-1.083
	(1.230)	(1.157)	(0.856)	(1.011)
Observations	639,840	639,840	633,600	633,600
F-test of excluded instrument	66.08	66.08	68.48	68.48

Note: All columns account for age, gender, continent-fixed effects, survey-wave fixed effects, and geographic controls. Continent-fixed effects are dummy variables for Europe, Asia, Oceania, North America, and South America, with Africa being the reference category. Controls include absolute latitude, mean temperature, mean elevation, range of elevation, ruggedness, distance to coast, island dummy, and the mean and standard deviation of caloric suitability. Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1

Data Appendix. Variable Descriptions

SWB Variables for Country-Level Analysis:
The Life Satisfaction Index WDH is obtained from the World Database of Happiness (Veenhoven, 2017). It is analogous to the WVS's life satisfaction measure. We use the country average of this variable for all available years and use its standardized version in the analysis.

Life Ladder Index WHR is based on the Gallup World Poll's question for the life ladder: "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" We take the country average of this life evaluation question between 2012 and 2020 and use its normalized values to mean zero and the standard deviation of one in the regression analysis. This variable comes from World Happiness Report, 2020 (Helliwell et al., 2020a).

Positive Affect reflects pleasant emotions (i.e., enjoyment, love, resting well, smiling or laughing a lot, being treated with respect, doing something interesting, and being proud of something. *Negative Affect*, representing unpleasant feelings (i.e., physical pain, worrying, sadness, stress, anger, and depression). Finally, the *Affect Balance Scale* is calculated as an arithmetic difference between positive and negative affect. We use the country average of these variables between 2012 and 2020. We also use standardized versions of them in the analysis. They come from the World Happiness Report, 2020 (Helliwell et al., 2020a).

SWB Variables for Individual-Level Analysis:
Life Satisfaction Index WVS is based on the WWS question: "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are "completely dissatisfied" and 10 means you are "completely satisfied" where would you put your satisfaction with your life as a whole?". We standardize this variable in the analysis with a mean of zero and a standard deviation of one. *Satisfied* captures the upper tail of the life satisfaction distribution. It is set equal to 1 for respondents who rated their satisfaction levels as 8, 9, or 10, and it is coded as 0 otherwise. *Dissatisfied* captures the lower tail of the life satisfaction distribution. It is set equal to 1 for respondents who rated their satisfaction levels as 1, 2, or 3, and 0 otherwise. We use these variables for the individual-level analysis.

Happiness Index WVS is constructed based on answers to the following question: "Taking all things together, would you say you are: very happy, quite happy, not very happy, and not at all happy." We standardized this variable for use in the analysis. Then, we construct a dichotomous variable, *Happy,* equal to 1 if a respondent is quite happy or very happy and zero otherwise. We also create the binary variable *Unhappy*, getting the value of 1 if a respondent is not at all happy, and zero otherwise. We use these variables for the individual-level analysis.

SWB Variables of First- and Second-Generation Immigrants:
Life Satisfaction variable for first- and second-generation immigrants in Europe is based on the European Social Survey (ESS) question: "All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied." We use a standardized version of this variable as an independent variable in the analysis.

Happiness for first- and second-generation immigrants in Europe is based on the European Social Survey (ESS) question: "Taking all things together, how happy would you say you are?" Responses can range between 0 (=extremely unhappy) and 10 (=extremely happy). We standardized this variable for use in the analysis.

Affect Balance Scale for first and second generations in Europe is based on European Social Survey items asking respondents how often past week they felt depressed (fltdpr), everything did as effort (flteeff), lonely (fltlnl), sad (fltsd), could not get going (cldgng), were happy (wrhpp) and enjoyed life (enjlf). We construct the *Affect Balance Scale* by taking the difference between the sums of positive and negative emotions. We use a standardized version of this variable as an independent variable in the analysis.

Happiness for first- and second-generation immigrants in the US is based on the General Social Survey item: "Taken all together, how would you say things are these days, would you say that you are very happy (=1), pretty happy (=2), or not too happy (=3)?" We construct the *Happiness* variable by standardizing responses to this question after rescaling them to get greater values indicating higher levels of SWB.

Main Explanatory Variables:
Population diversity (aa), the ancestry adjusted (i.e., accounting for post-1500 population mix) expected heterozygosity, captures the likelihood of genetic similarity between two randomly selected individuals within a country. This measure comes from Ashraf and Galor(2013a).

Migratory Distance to capital cities of today's countries. The waypoints are Cairo, Egypt; Istanbul, Turkey; Phnom Penh, Cambodia; Anadyr, Russia; and Prince Rupert, Canada. This measure comes from Ashraf and Galor(201a3).

Other Variables:
Absolute Latitude is the centroid of a country's shape, obtained from Ashraf and Galor(2013a).

Mean Temperature is the annual mean temperature extracted from WorldClim version 2 climate data for 1970-2000 (Fick and Hijmans, 2017) using a country shape file from the GADM (https://gadm.org/).

Mean Elevation and *Range of Elevation* are extracted from National Oceanic and Atmospheric Administration (NOAA) and U.S. National Geophysical Data Center, TerrainBase, (nelson.wisc.edu/sage/data-and-models/atlas/) using a country shape file from the GADM (https://gadm.org/).

Terrain Ruggedness, capturing the topographic heterogeneity that allows the concealment of people and animals in a country's territory, comes from Nunn and Puga (2012).

Distance to Coast, the average distance to the nearest ice-free Coast (1000 km.), comes from Nunn and Puga (2012).

Land Suitability for agriculture is based on the post-1500 optimal caloric suitability index, as reported by Galor and Ozak (2016).

Island Dummy is a binary indicator that takes the value of 1 if a country is an island and takes the value of 0 otherwise.

The *Number of Ethnic Groups* is the number of distinct ethnic groups in a country. It is obtained from Fearon (2003).

Ethnic Fractionalization comes from Alesina et al. (2003) and captures the probability that two randomly drawn individuals from the population belong to different ethnic groups.

Religious Fractionalization comes from Alesina et al. (2003) and captures the probability that two randomly drawn individuals from the population belong to different religious groups.

Ethno-Linguistic Polarization Index comes from Desmet et al. (2012).

Income is the real GDP per capita in the year 2000 (in constant 2000 international dollars) as reported by the Penn World Table, version 6.2 (Feenstra et al., 2015).

Freedom of Choice is based on World Value Survey item A173: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "no choice at all" and 10 means "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life turns out. " We standardize this variable to use in the analysis.

Perception of Democracy is based on the World Value Survey item E236, stating that "And how democratically is this country being governed today? Again, using a scale from 1 to 10, where 1 means that it is "not at all democratic" and 10 means that it is "completely democratic," what position would you choose?". We standardize this variable to use in the analysis.

Interpersonal Trust is based on the WVS item A165, which states, "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Possible responses are "Most people can be trusted" and "Need to be very careful.". We create an indicator that equals 1 if the response is "Most people can be trusted," and 0 otherwise.

The *Family Ties Index* is based on three different variables from WVS. The first variable is a survey item (A001) questioning the respondent's attitudes towards the importance of family in one's life. Possible responses to this item include "Very important (=1)," "Rather important (=2)," "Not very important (=3)," and "Not at all important (=4)". The second variable is a survey item ((variable A025) asking respondents' opinions about respect and love for parents. Possible responses are "Always respect (=1)", "Respect if earned (=2)" and "Neither (=3)". The third variable is a survey item (variable A026) asking respondents' opinions about the responsibilities of parents to their children. Possible responses are: "Parents´ duty is to do their best for their children even at the expense of their own well-being (=1)", "Parents have a life of their own and should not be asked to sacrifice their own well-being for the sake of their children (=2), and "Neither (=3)". We construct the Family Ties Index based on these variables using principal component analysis; the higher values of the resulting index indicate stronger family ties and vice versa.

Competition Good is based on a WVS item asking respondents' attitudes toward competition. Possible response ranges from 1 (= competition is good) to 10 (= competition is harmful). We first rescale it so that higher values indicate favorable attitudes toward competition. Then, we standardize the values of the *Competition Good* to mean 0 and standard deviation of 1.

Friends Important is based on a WVS item measuring the importance of friends in a respondent's life. Possible responses are: "Very important (=1)," "Rather important (=2)," "Not very important (=3)," and "Not at all important (=4)." We normalized this item after rescaling it for use in the analysis.

Distance to the Technological Frontier in 1500 is the distance to the nearest regional technological frontier from a country's capital city around 1500. It comes from Ashraf and Galor (2013a).

Genetic distance to Denmark, the weighted Nei distance, measures the relatedness of each country's population to Denmark's population. This variable comes from Spolaore and Wacziarg (2009).

Fragile States Index (FSI) measures the fragility of a state under social, economic, and political pressures. It is constructed based on twelve key political, social, and economic indicators and more than 100 sub-indicators that are calculated by evaluating millions of documents using the Conflict Assessment System Tool (CAST), a content analysis platform, together with quantitative data and expert validations. It ranges between 0 and 100, with higher values indicating higher levels of state fragility. To capture different dimensions of the macro social environment, we use several sub-indicators of this index, including *Security Apparatus, Factionalized Elites, State Legitimacy Human Rights & Rule of Law, and Uneven Economic Development,* definitions of which are given in Section 7.1 in the text. We use standardized versions of these variables in the analysis. These variables are from Fund for Peace and are available at https://www.fundforpeace.org/.

The *Genetic distance to Denmark* variable, which is the weighted Nei distance, measures the relatedness of each country's population to Denmark's population. This variable is obtained from Spolaore and Wacziarg (2009).